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UNIVERSITY OF CAMBRIDGE.

SANITARY SCIENCE EXAMINATION.

TUESDAY, *October 7*, 1884. 9 A.M. to 12 M.

PART I. PAPER 1.

1. How much solid and liquid excreta are passed by an average adult man *per diem*, and how much water-free solids does the amount represent?

How much *per annum* would a mixed community of 50,000 persons pass, and how much ammonia would be contained in the total bulk?

2. How do you determine the presence and amount of Alum in bread? How much must be present to condemn a sample of bread?

3. What is the Composition of Milk? What are the usual adulterations, and how are they detected?

4. What is the amount of cubic space required in Hospital Wards for ordinary cases? Give the shape and dimensions of a ward for 20 beds.

5. What is the most accurate method of estimating the increase of population in a community? Give an example.

6. What is known as "Poisson's formula" and how is it applied?

WEDNESDAY, October 8, 1884. 9 A.M. to 12 M.

PART I. PAPER 2.

1. GIVE a detailed account of the "Ammonia process" of Water Analysis. What is the value of the information obtained from it?
 2. Explain Montgolfier's formula. How is it used? What correction must be applied to the results obtained by it?
 3. Classify disinfectants and Antiseptics, and describe the ways in which they act.
 4. What is meant by hydraulic mean depth, and what is it in a circular sewer 36 inches in circumference? How does it enter into calculations of the flow of sewage?
 5. Describe the methods of ascertaining the state of Ventilation of a room. The air of a room occupied by 6 persons, and containing 5000 cubic feet of space yields 7.5 parts of carbonic acid per 10,000 parts. How much air is being supplied per person per hour?
 6. What are the properties of Ozone? What are its natural and artificial sources, and what methods are employed for its identification?
-

THURSDAY, *October 9, 1884.* 9 A.M. to 12 M.

PART II. PAPER I.

1. GIVE statistics of the mortality from small-pox before the introduction of the practice of vaccination. Point out in what respects they differ from small-pox statistics at the present day.

Describe the different ways in which small-pox is known, or may be suspected, to spread. Add, in each case, a description of the precautions which should be taken by a Medical Officer of Health.

2. What dangers may attend vaccination? How are they to be guarded against?

3. As Medical Officer of a Port,

(a) What precautions would you take or advise against the introduction of cholera?

(b) What regulations would you recommend in respect of emigrants landing from abroad?

4. Give in outline any typical instances you are acquainted with (referring to your authorities) of infectious diseases spread by milk.

What legal control is there over dairies and cow-sheds? By what authorities is that control exercised?

5. Discuss the difficulties of sewer-ventilation. How are they affected by the tide when the sewer outfall is between high and low water levels?

How are sewers flushed? Describe any form of automatic flushing apparatus that you know.

6. What regular meteorological observations would you suggest as useful to be taken by a Medical Officer of Health? What would be their use?

FRIDAY, *October 10, 1884.* 9 A.M. to 12 A.M.

PART II. PAPER II.

1. How do the laws of the realm affect manufacturers as regards the employment of children? Give an outline of the principal sections which bear upon this point.

2. How are we able to assess the damage produced by the mortality of a given district by:—

- (1) Unhealthy occupations. (2) Overcrowding. (3) Defective water supply. (4) Unwholesome food.

Shew definite reasons for referring each to its own class.

3. How would you establish before a Court of Summary Jurisdiction, that a given nuisance such as "bone boiling" is injurious to health? What reasons would you adduce for your opinions?

4. Discuss the question of floor space; give its bearings, how does its consideration apply sanitarily in: (1) Workhouses: as to day rooms and dormitories. Lying in rooms. (2) Schools. (3) Hospitals. (4) Lodging Houses.

5. In preparing a dietary for an able-bodied population, what are the points to be considered so as to get the best results? What influence has diet upon the sewage of a district?

6. How does occupation influence the mortality of a given district? Shew that it is possible for a district to have a death rate of moderate amount as to figures, and yet to be very unhealthy in a sanitary point of view.

REGULATIONS
FOR THE
EXAMINATION IN SANITARY SCIENCE
OF THE
UNIVERSITY OF CAMBRIDGE.

AN Examination in so much of State Medicine as is comprised in the functions of Officers of Health, will be held yearly in Cambridge, beginning on the first Tuesday in October, and ending on the following Friday afternoon.

Any person whose name is on the Medical Register of the United Kingdom may present himself for this examination provided he be in his 24th year at least when he presents himself for Part I., and have attained 24 years of age before he presents himself for Part II.

The Examination will be in two parts.

Part I. will comprise:—Physics and Chemistry. The principles of Chemistry, and methods of analysis with especial reference to analyses of air and water. Application of the microscope. The laws of heat, and the principles of pneumatics, hydrostatics and hydraulics, with especial reference to ventilation, water-supply, drainage, construction of dwellings, disposal of sewage and refuse, and sanitary engineering in general. Statistical Methods.

Part II. will comprise:—Laws of the realm relating to public health. Origin, propagation, pathology, and prevention of epidemic and infectious diseases. Effects of overcrowding, vitiated air, impure water and bad or insufficient food. Unhealthy occupations and the diseases to which they give rise. Water-supply and drainage in reference to health. Nuisances injurious to health. Distribution of diseases within the United Kingdom, and effects of soil, season and climate.

The examination in both parts will be oral and practical as well as in writing.

Candidates may present themselves for either part separately or for both together at their option; but the result of the examination in the case of any candidate will not be published until he has passed to the satisfaction of the Examiners in both parts.

Every candidate will be required to pay a fee of four guineas before admission to *each part* of the examination.

Every candidate who has passed both parts of the examination to the satisfaction of the Examiners will receive a certificate testifying to his competent knowledge of what is required for the duties of a Medical Officer of Health.

All applications for admission to this examination, or for information respecting it, should be addressed to Professor Liveing, Cambridge.

Candidates who desire to present themselves for examination in October next, must send in their applications, and transmit the fees, to Professor Liveing, Cambridge, on or before Sept. 28. Cheques should be crossed "Mortlock and Co." No fees can in any case be returned.

The applications of candidates, whose names have not been on the register three years, should be accompanied by a Certificate of Birth, or other proof of age.

The following suggestions have been drawn up by the Syndicate for superintending the Examination in State Medicine as some guide to candidates preparing for that Examination.

PART I. The principles of Chemistry are sufficiently set forth in any of the ordinary manuals. Candidates will be expected to understand the application of the general laws to such cases as occur in the practice of an Officer of Health, but will not be expected to shew an acquaintance with those details of Chemistry which have no direct bearing on sanitary questions. No importance will be attached to the use of any particular chemical notation. It is not expected that Officers of Health will in general be able to act as public analysts, but that they will know the methods of analysis and be able to interpret correctly the results of professional analysis. The kinds of applications of the several sciences of which the candidates are expected to shew a competent knowledge will be best understood by a perusal of Parkes's *Manual of Practical Hygiene*. In the actual analysis of water and air candidates will not be expected to make complete quantitative analyses, but to know how to apply ordinary chemical methods for the detection and discrimination of mineral and organic substances in the samples. Candidates will be expected to shew a practical acquaintance with the use of the microscope.

PART II. Candidates will be expected to shew an acquaintance with the sanitary laws in force in England; but if any candidate has information respecting alternative laws in force in the Metropolis or in Scotland or in Ireland, opportunity will be given him, alternatively, of shewing his acquaintance with such laws.

The rest of Part II., besides the subjects expressly mentioned, is to be understood as including those of Vaccination, Disinfectants, the management of outbreaks of Infectious Diseases, with the construction of Hospitals temporary or permanent; Endemic Diseases; Birth-rates and Death-rates; the qualities and suitableness of various Waters used for domestic purposes; the inspection of factories, mines, workshops and common lodging-houses.

The following list of works, with the names of the publishers, will probably be found valuable to some of the candidates, but the necessity of reading all or any one of them is not urged upon them.

On Parts I. and II.

Parkes's *Manual of Practical Hygiene*. Churchill.

G. Wilson's *Handbook of Hygiene*. Churchill.

Grimshaw and others, *Manual of Public Health for Ireland*. Fannin, Dublin; and Longmans.

Cameron's *Manual of Hygiene*. Hodges, Foster and Co., Dublin, and Baillière, Tindall and Cox.

Seaton's *Handbook of Vaccination*. Macmillan.

- *Army Medical Reports. *Reports on Hygiene*. Eyre and Spottiswoode.
- *Reports to Privy Council and Local Government Board by their Medical Officer. Eyre and Spottiswoode.

On Chemistry. General principles.

- Fownes' *Manual of Chemistry*. Churchill.
- Bloxam's *Chemistry*. Churchill.
- Roscoe's *Lessons in Elementary Chemistry*. Macmillan.
- Attfield's *Chemistry*. Van Voorst.

On Analysis.

- Bloxam's *Laboratory Teaching*. Churchill.
- Bowman's *Practical Chemistry*. Churchill.
- Sutton's *Systematic Handbook of Volumetric Analysis*. Churchill.
- Frankland's *Water Analysis for Sanitary purposes*. Van Voorst.
- Wanklyn and Chapman's *Water Analysis*. Trübner.
- Hartley's *Air and its Relations to Life*. Longmans.
- Wanklyn's *Milk Analysis*. Trübner.
- Wanklyn and Cooper's *Bread Analysis*. Trübner.
- Fox, C. *Sanitary Examinations of Water, Air and Food*. Churchill.

On Physics.

- Todhunter's *Natural Philosophy for Beginners*. Macmillan.
- Ganot's *Physics*. Longmans.
- Everett's *Textbook of Physics*. Blackie.

On Microscopy.

- Carpenter's *The Microscope and its Revelations*. Churchill.
- Macdonald's *Guide to Microscopical Examination of Drinking Water*. Churchill.
- *Hassall's *Food and its Adulterations*. Longmans.

On Sanitary Engineering, Water Supply, Sewage, &c.

- Eassie's *Sanitary Arrangement for Dwellings*. Smith, Elder and Co.
- Galton's *Healthy Dwellings*. Macmillan.
- Corfield's *Dwelling Houses, their Sanitary Construction and Arrangement*. Lewis.
- *Bailey-Denton, *Sanitary Engineering*. Spon.
- *Latham's *Sanitary Engineering*. Spon.
- *Bayles' *House drainage and water service*. Williams, New York.
- Tomlinson's *Warming and Ventilation*. Lockwood.
- Corfield's *Treatment and Utilization of Sewage*. Macmillan.
- *Report of Committee appointed by President of Local Government Board on modes of treating Town Sewage. Eyre and Spottiswoode.
- *Reports of Royal Commission on Pollution of Rivers, especially the 6th on Domestic Water Supply. Eyre and Spottiswoode.
- *Report from Select Committee on Public Health Act (1875) Amendment Bill, with the Evidence. Eyre and Spottiswoode.
- *R. Angus Smith's *Air and Rain*. Longmans.
- *Ure's *Dictionary of Arts, Manufactures and Mines*. Longmans.

On the Laws of the Realm and Bye-laws relating to Public Health.

For England :

Public Health Act, 1875, and the Acts of Parliament relating to the various subject-matters within the domain of Hygiene passed since that date.

Artisans' and Labourers' Dwellings Acts.

Vaccination Acts.

For the Metropolis, or for Scotland, or for Ireland :

Laws dealing with the same subject-matters as the above, and having application to the particular part of the United Kingdom.

Model Bye-laws of the Local Government Board. Eyre and Spottiswoode.

Adulteration of Food and Drugs Acts.

On Statistics.

Lewis's *Digest of the English Census*. Stanford.

The article on 'Statistics' in the *Cyclopædia of Anatomy and Physiology*. Longmans.

*Dr Farr's letters to the Registrar-General in the early Reports of the Registrar-General.

*Reports of the Registrar-General. Eyre and Spottiswoode.

*Deaths in England. Average Annual Proportion of Deaths, &c. 1861—70. Parliamentary Paper C. 874 Session 1873. Eyre and Spottiswoode; and may be had also of Hansard, or of King, King St., Westminster.

On construction of Hospitals.

Miss Nightingale's *Notes on Hospitals*. Longmans.

Oppert's *Hospitals, Infirmarys and Dispensaries, their construction, interior arrangement and management*. Churchill.

Galton, *On the construction of Hospitals*. Macmillan.

Burdett, *Cottage Hospitals*. Churchill.

*De Chaumont. *Hospitals* in the *Encyclopædia Britannica*, last edition.

* The books thus marked are books of reference.

* * * The Examination Papers set at former examinations can be obtained at the Cambridge Warehouse, Ave Maria Lane, London, price 1s. each set, or by post 1s. 2d.

PREVIOUS EXAMINATION.

FRIDAY, October 3, 1884. 1—3½.

ALGEBRA (ADDITIONAL).

(A)

1. DEFINE an arithmetical progression, and find an expression for the n th term in terms of the first term and common difference.

Find the 15th term of an arithmetical progression whose 8th and 12th terms are respectively 17 and 25.

2. Find an expression for the sum of an arithmetical progression of n terms.

Find the sum of the arithmetical progression of $2m$ terms of which the two middle terms are $a-b$, and $a+b$.

3. Find the sum of a geometrical progression of n terms in terms of the 1st term and the common ratio.

The third and fifth terms of a geometrical progression are respectively 12 and 48. Find the sums of eight terms of the two progressions which satisfy the conditions.

4. Sum the following series

(1) $18 + 15 + 12 + \dots$ to 13 terms,

(2) $(2n-1) + (2n-3) + (2n-5) + \dots$ to n terms,

(3) $\frac{1}{3} + 1 + \frac{3}{2} + \dots$ to 6 terms,

(4) $10 + 5 + 2\frac{1}{2} + \dots$ to infinity.

5. If $a + b + c = 0$, prove that

$$a^3 + b^3 + c^3 + 3(a+b)(b+c)(c+a) = 0,$$

and

$$c^3(a-b) + a^3(b-c) + b^3(c-a) = 0.$$

6. Divide £1230 among three persons, so that if their shares be diminished by £5, £10 and £15 respectively, the remainders shall be in the ratios 3 : 4 : 5.

7. Find the two times between 3 and 4 o'clock when the hands of a watch are separated by 4 minute spaces, and the interval between each of these times and the time when the hands are together.

8. Define a logarithm, and prove that

$$(1) \log_a mn = \log_a m + \log_a n,$$

$$(2) \log_a b \cdot \log_b a = 1.$$

Shew how to reduce a system of logarithms to the base 10, to a system to the base 100.

9. Define the characteristic and the mantissa of a logarithm.

Find the characteristic of the logarithm of 500, to the base 3 and to the base

$\frac{1}{3}$, and the logarithm of $\overline{001}^{001}$ to the base 10.

10. Having given $\log_{10} 3 = \cdot 4771213$, find how many figures there are in 3^{100} , and in the integral part of $(3\frac{1}{3})^{100}$.

11. Find the fifth root of 5·4, having given

$$\log 3 = \cdot 4771213,$$

$$\log 5 = \cdot 6989700,$$

$$\log 14011 = 4\cdot 1464691,$$

$$\log 14012 = 4\cdot 1465001.$$

FRIDAY, October 3, 1884. 1—3½.

ALGEBRA (ADDITIONAL).

(B)

1. FIND an expression for the general term of an arithmetical progression, in terms of the first term and the common difference.

Find the 18th term of an arithmetical progression, whose 6th and 13th terms are respectively 22 and 43.

2. Investigate an expression for the sum of a series of n terms in arithmetical progression.

If the sum of the arithmetical progression, 18, 15, 12, &c. be 45, find the number of terms, and explain the double answer.

3. Define a geometrical progression, and find the sum of a series of n terms in geometrical progression.

Prove that in a geometrical series of an odd number of terms, the middle term is a geometric mean between the first and last terms.

4. Sum the following series

(1) $17 + 15 + 13 + \dots$ to 18 terms,

(2) $1 + 3 + 5 + \dots$ to n terms,

(3) $\frac{1}{2} + 1 + \frac{3}{2} + \dots$ to 5 terms,

(4) $6 + 2 + \frac{2}{3} + \dots$ to infinity.

5. If $a + b + c = 0$, prove that

$$ab(a+b) + bc(b+c) + ca(c+a) + 3abc = 0,$$

and

$$a^3(b-c) + b^3(c-a) + c^3(a-b) = 0.$$

6. Divide £900 between three persons, so that if their shares be increased by £10, £15 and £20 respectively, the sums shall be in the ratios 4 : 5 : 6.

7. Find the two times between 5 and 6 o'clock, when the hands of a watch are separated by 14 minute spaces and the interval between each of these times and the time when the hands are together.

8. Define a logarithm, and prove that

$$(1) \log_a \frac{m}{n} = \log_a m - \log_a n,$$

$$(2) \log_a N = \frac{\log_b N}{\log_b a}.$$

Shew how to reduce a system of logarithms to the base 10, to a system to the base 1000.

9. Define the characteristic and mantissa of a logarithm. Find the characteristic of $\log 350$, and of $\log 065$, and the logarithm of $\overline{0001}^{0001}$ to the base 10.

10. Having given $\log_{10} 2 = .3010300$, $\log_{10} 3 = .4771213$, find how many figures there are in 5^{100} and in the integral part of $(54)^{100}$.

11. Find the cube root of 144, having given in addition to the logarithms in the preceding question

$$\log 24328 = 4.3861064,$$

$$\log 24329 = 4.3861243.$$

SATURDAY, October 4, 1884. 9—11½.

TRIGONOMETRY.

(A)

1. DEFINE the unit of circular measure of an angle.

If one quarter of a right angle were taken as the unit, what would be the measure of an angle of 15° , and of the unit of circular measure?

2. Define the sine and tangent of an angle; and find expressions for each in terms of the other.

3. Find the sine and tangent of
- 30°
- and of
- 45°
- .

4. Prove the formulæ

$$(i) \quad \cos(A - B) = \cos A \cos B + \sin A \sin B,$$

$$(ii) \quad \cos B - \cos A = 2 \sin \frac{A+B}{2} \cdot \sin \frac{A-B}{2},$$

$$(iii) \quad \cot\left(\frac{\pi}{4} + \theta\right) + \cot\left(\frac{\pi}{4} - \theta\right) = 2 \sec 2\theta,$$

$$(iv) \quad \frac{\sin 4A - \sin 2A}{\cos 2A - \cos 4A} = \cot 3A.$$

5. Three angles are in Arithmetical Progression, the common difference being
- 60°
- . Prove that the product of their tangents is equal to the tangent of their sum with its sign changed.

6. Prove that
- $2 \sin A = \pm \sqrt{1 + \sin 2A} \pm \sqrt{1 - \sin 2A}$
- , and determine the proper signs for the roots when
- $A = 1880^\circ$
- .

7. Prove that in any triangle

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c};$$

also that

$$\cot C - \cot B = \frac{b^2 - c^2}{bc} \operatorname{cosec} A.$$

8. Prove that
- $\sin \frac{A}{2} = \sqrt{\frac{(s-b)(s-c)}{bc}}$
- .

Hence find the sines of the angles of a triangle whose sides are 7, 8 and 9 feet long.

9. In a triangle
- $b = 32$
- ,
- $c = 40$
- ,
- $B = 52^\circ 32' 15''$
- ; find
- A
- and
- C
- , having given

$$L \sin 52^\circ 32' = 9.8996604, \text{ diff. for } 1' = 968,$$

$$L \sin 82^\circ 50' = 9.9965937, \text{ diff. for } 1' = 159,$$

$$\log 2 = .3010300.$$

SATURDAY, October 4, 1884. 9—11½.

TRIGONOMETRY.

(B)

1. WHAT is meant by the circular measure of an angle? If one-third of a right angle were taken as the unit, what would be the measure of an angle of 75° , and of the unit of circular measure?

2. Define the cosine and cotangent of an angle, and find an expression for each in terms of the other.

3. Find the cosine and cotangent of 45° and of 60° .

4. Prove the formulæ:

$$(i) \sin(A - B) = \sin A \cos B - \cos A \sin B,$$

$$(ii) \sin A - \sin B = 2 \cos \frac{A+B}{2} \cdot \sin \frac{A-B}{2},$$

$$(iii) \tan\left(\frac{\pi}{4} + \theta\right) + \tan\left(\frac{\pi}{4} - \theta\right) = 2 \sec 2\theta,$$

$$(iv) \frac{\cos A - \cos 3A}{\sin 3A - \sin A} = \tan 2A.$$

5. Three angles are in Arithmetical Progression, the common difference being 120° . Prove that the sum of their sines is zero.

6. Prove that $2 \cos A = \pm \sqrt{1 + \sin 2A} \pm \sqrt{1 - \sin 2A}$, and determine the proper signs for the roots when $A = 2245^\circ$.

7. Prove that in any triangle

$$a = c \cos B + b \cos C;$$

$$\text{also that } ab \cos C + bc \cos A + ca \cos B = \frac{a^2 + b^2 + c^2}{2}.$$

$$8. \text{ Prove that } \cos \frac{A}{2} = \sqrt{\frac{s(s-a)}{bc}}.$$

Hence find the sines of the angles of a triangle whose sides are 9, 10 and 11 feet long.

9. In a triangle, $a = 96$, $b = 75$, $A = 37^\circ 17' 10''$, find B and C , having given

$$L \sin 37^\circ 17' = 9.7822985, \text{ diff. for } 1' = 1659,$$

$$L \sin 28^\circ 14' = 9.6749194, \text{ diff. for } 1' = 2352,$$

$$\log 2 = .3010300.$$

SATURDAY, October 4, 1884. 1—3½.

MECHANICS.

(A)

1. DEFINE Force. Give examples of different kinds of forces.

A heavy chain has weights of 10 lbs. and 16 lbs. attached to its ends, and is hung in equilibrium over a smooth pulley; if the greatest tension of the chain is 20 lbs., find the weight of the chain.

2. Assuming the truth of the parallelogram of forces for the direction of the resultant of two commensurable forces extend it to the case of incommensurable forces.

If two forces be incommensurable can their resultant be commensurable with either of them? or with neither? Give examples.

3. If three forces acting at a point are in equilibrium they can be represented by the sides of a triangle taken in order.

Give a geometrical construction for resolving a force into two others, one of which is given in magnitude and the other in direction.

4. Find the magnitude and line of action of the resultant of two parallel forces acting in the same direction.

5. Find a formula for the position of the centre of gravity of any number of heavy particles situated in one plane.

A hole of given size is punched out of a uniform circular plate; shew that the centre of gravity of the remainder must lie within a certain circle.

6. If a heavy body be suspended from a fixed point the centre of gravity will be vertically below the point of suspension.

7. State the conditions of equilibrium on a lever, and prove them in the case of a bent lever with the forces not parallel.

If the forces be 13 lbs. and 14 lbs. and their directions make an angle whose cosine is $-\frac{4}{13}$, find the pressure on the fulcrum.

8. Explain the construction and graduation of the common steelyard.

A uniform rod being divided into 20 equal parts by graduations, the fulcrum is placed at the first graduation. The greatest and least weights which the instrument can weigh are 2 lbs. and 20 lbs.; find its weight.

9. Find the relation between the power and weight on a smooth inclined plane when the power acts parallel to the plane.

If the plane be turned over so that its height becomes its base the power required to support a given weight will be greater if the original height was less than the base.

SATURDAY, October 4, 1884. 1—3½.

MECHANICS.

(B)

1. STATE and illustrate the principle of Transmission of Force.

A heavy chain has weights of 10 lbs. and 16 lbs. attached to its ends and is hung in equilibrium over a smooth pulley: if the lengths of the chain on either side be as 3 : 2, find the weight of the chain.

2. Assuming the truth of the parallelogram of forces for the direction of the resultant of two forces, prove it for its magnitude.

Find the resultant of two forces of 13 lbs. and 14 lbs. acting at an obtuse angle whose sine is $\frac{1}{3}$.

3. If three forces acting at a point can be represented by the sides of a triangle taken in order they shall be in equilibrium.

Give a geometrical construction for resolving a force into two others inclined at a given angle, one of which is to be of given magnitude.

4. Find the magnitude and line of action of the resultant of two parallel forces acting in opposite directions.

5. Find the centre of gravity of a uniform heavy triangular lamina.

If a given weight be placed anywhere on the lamina, the centre of gravity of the whole will lie within a certain triangle.

6. If a body rest on a horizontal plane the vertical through the centre of gravity must fall within the base.

7. State the conditions of equilibrium on a lever, and prove them in the case of a straight lever with the forces parallel to each other.

If the pressure on the fulcrum be equal to ten times the difference of the forces, find the ratio of the arms.

8. Explain the construction and graduation of the Danish steelyard.

The distance between the zero of graduation and the end of the instrument is divided into 20 equal parts and the greatest weight which can be weighed is 3 lbs. 9 oz.; find the weight of the instrument.

9. Find the conditions of equilibrium on a smooth inclined plane when the power acts horizontally.

If the plane be turned over so that its height becomes its base the power required to support a given weight will be greater if the original base exceeded the height.

MONDAY, October 6, 1884. 1—3½.

ST MARK'S GOSPEL.

(A)

N.B. Candidates are required to satisfy the Examiners in the questions as well as in translation.

1. TRANSLATE the following passages and answer the questions upon them :

(a) (11) Καὶ ἐξῆλθον οἱ Φαρισαῖοι καὶ ἤρξαντο συζητεῖν αὐτῷ, ζητοῦντες παρ' αὐτοῦ σημεῖον ἀπὸ τοῦ οὐρανοῦ, πειράζοντες αὐτόν. (12) καὶ ἀναστενάξας τῷ πνεύματι αὐτοῦ λέγει Τί ἡ γενεὰ αὕτη ζητεῖ σημεῖον; ἀμὴν λέγω, εἰ δοθήσεται τῇ γενεᾷ ταύτῃ σημεῖον. καὶ ἀφείς αὐτοὺς πάλιν ἐμβὰς ἀπῆλθεν εἰς τὸ πέραν. καὶ ἐπελάθοντο λαβεῖν ἄρτους, καὶ εἰ μὴ ἓνα ἄρτον οὐκ εἶχον μεθ' ἐαυτῶν ἐν τῷ πλοίῳ. καὶ διεστέλλετο αὐτοῖς λέγων Ὁρᾶτε, βλέπετε ἀπὸ τῆς ζύμης τῶν Φαρισαίων καὶ τῆς ζύμης Ἡρώδου.

Explain the demand made in v. 11. With what addition does St Matthew record the answer? Parse πέραν. Explain the use of εἰ in εἰ δοθήσεται.

(b) Οὐδὲ τὴν γραφὴν ταύτην ἀνέγνωτε Λίθον ὃν ἀπεδοκίμασαν οἱ οἰκοδομοῦντες, οὗτος ἐγενήθη εἰς κεφαλὴν γωνίας· παρὰ Κυρίου ἐγένετο αὕτη, καὶ ἔστιν θαυμαστὴ ἐν ὀφθαλμοῖς ἡμῶν; καὶ ἐζήτουν αὐτὸν κρατῆσαι, καὶ ἐφοβήθησαν τὸν ὄχλον.

From what Book is this passage quoted? What is its original sense, and how is it applied here? Parse λίθον, αἴτη.

(c) Καὶ παραπορευόμενοι πρῶτ' εἶδον τὴν συκὴν ἐξηραμμένην ἐκ ῥιζῶν. καὶ ἀναμνησθεῖς ὁ Πέτρος λέγει αὐτῷ Ῥαββεί, ἴδε ἡ συκὴ ἣν κατηράσω ἐξήρανται. καὶ ἀποκριθεὶς ὁ Ἰησοῦς λέγει αὐτοῖς Ἐχετε πίστιν θεοῦ· ἀμὴν λέγω ὑμῖν ὅτι ὃς ἂν εἴπῃ τῷ ὄρει τούτῳ Ἄρθητι καὶ βλήθητι εἰς τὴν θάλασσαν, καὶ μὴ διακριθῇ ἐν τῇ καρδίᾳ αὐτοῦ ἀλλὰ πιστεύῃ ὅτι ὃ λαλεῖ γίνεται, ἔσται αὐτῷ.

Parse ἐξηραμμένην, κατηράσω, ἄρθητι, διακριθῇ.

What parable is recorded elsewhere similar to the incident here referred to?

2. Translate and explain :

(a) καθεύδετε τὸ λοιπὸν καὶ ἀναπαύεσθε· ἀπέχει.

(b) βουλόμενος τῷ ὄχλῳ τὸ ἱκανὸν ποιῆσαι.

(c) ὁ καταλύων τὸν ναὸν καὶ οἰκοδομῶν ἐν τρισὶν ἡμέραις, σῶσον σεαυτόν.

(d) θεωρεῖ θόρυβον καὶ κλαίοντας καὶ ἀλαλάζοντας πολλὰ.

(e) διὰ τοῦτο ἐνεργοῦσιν αἱ δυνάμεις ἐν αὐτῷ.

3. Give the meaning, and, where known, the situation and modern name of Καφαρναούμ, Σιδών, Ἰερειχώ; and explain κατάλυμα, ἐπιγραφή, τῇ ὥρᾳ τῇ ἐννιάτῃ.

4. What evidence does this Gospel furnish as to the language usually spoken at the time and place to which the history belongs?

MONDAY, October 6, 1884. 1—3½.

ST MARK'S GOSPEL.

(B)

N.B. Candidates are required to satisfy the Examiners in the questions as well as in translation.

1. TRANSLATE the following passages and answer the questions upon them:

(a) Καὶ ἐξῆλθεν ὁ Ἰησοῦς καὶ οἱ μαθηταὶ αὐτοῦ εἰς τὰς κώμας Καισαρίας τῆς Φιλίππου· καὶ ἐν τῇ ὁδῷ ἐπηρώτα τοὺς μαθητὰς αὐτοῦ λέγων αὐτοῖς Τίνα με λέγουσιν οἱ ἄνθρωποι εἶναι; (28) οἱ δὲ εἶπαν αὐτῷ λέγοντες ὅτι Ἰωάννην τὸν βαπτιστήν, καὶ ἄλλοι Ἠλίαν, ἄλλοι δὲ ὅτι εἰς τῶν προφητῶν. (29) καὶ αὐτὸς ἐπηρώτα αὐτοὺς Ὑμεῖς δὲ τίνα με λέγετε εἶναι; ἀποκριθεὶς ὁ Πέτρος λέγει αὐτῷ Σὺ εἶ ὁ χριστός.

Explain the opinions mentioned in v. 28. With what addition does St Matthew record this incident? Parse Ἠλίαν. Explain the use of ὅτι in ὅτι εἰς....

(b) Καὶ τότε ὄψονται τὸν υἱὸν τοῦ ἀνθρώπου ἐρχόμενον ἐν νεφέλαις μετὰ δυνάμεως πολλῆς καὶ δόξης· καὶ τότε ἀποστελεῖ τοὺς ἀγγέλους καὶ ἐπισυνάξει τοὺς ἐκλεκτοὺς αὐτοῦ ἐκ τῶν τεσσάρων ἀνέμων ἀπ' ἄκρου γῆς ἕως ἄκρου οὐρανοῦ.

What prophetic passage is here referred to? Give its context. Parse ἄκρου, ὄψονται.

(c) Καὶ προσκαλεσάμενος τὸν κεντυρίωνα ἐπηρώτησεν αὐτὸν εἰ ἤδη ἀπέθανεν· καὶ γνοὺς ἀπὸ τοῦ κεντυρίωνος ἐδωρήσατο τὸ πτώμα τῷ Ἰωσήφ. καὶ ἀγοράσας σινδόνα καθελὼν αὐτὸν ἐνέιλησεν τῇ σινδόνι καὶ ἔθηκεν αὐτὸν ἐν μνηματι ὃ ἦν λελατομημένον ἐκ πέτρας, καὶ προσεκύλισεν λίθον ἐπὶ τὴν θύραν τοῦ μνημείου. Ἡ δὲ Μαρία ἡ Μαγδαληνὴ καὶ Μαρία ἡ Ἰωσήτος ἐθεώρουν ποῦ τέθειται.

Parse ἐνέιλησε, λελατομημένον, προσεκύλισε, τέθειται.

How is the μνημεῖον further described elsewhere?

2. Translate and explain:

- (a) ἐπιβαλὼν ἔκλαιεν.
- (b) ἤρξαντο ὁδὸν ποιεῖν τίλλοντες τοὺς στάχνας.
- (c) διὰ τριῶν ἡμερῶν ἄλλον ἀχειροποίητον οἰκοδομήσω.
- (d) εἰ μὴ πυγμῇ νίφονται τὰς χεῖρας οὐκ ἐσθίουσιν.
- (e) οἶνον νέον εἰς ἀσκοὺς καινοὺς.

3. Give the meaning, and, where known, the situation and modern name of Βηθσαϊδὰ, Καισαρία τοῦ Φιλίππου, Βηθανία; and explain ἀνώγειν, εἰκὼν, τῇ μιᾷ τῶν σαββάτων.

4. What features in this Gospel point to the impression produced upon an eye-witness?

MONDAY, October 6, 1884. 1—3½.

PLATO. APOLOGIA SOCRATIS.

N.B. Candidates are required to satisfy the Examiners in the questions as well as in translation.

1. TRANSLATE :

Τελευτῶν οὖν ἐπὶ τοὺς χειροτέχνας ἦα· ἐμαυτῷ γὰρ ξυνήδην οὐδὲν ἐπισταμένῳ, ὡς ἔπος εἰπεῖν, τούτους δὲ γ' ᾔδειν ὅτι εὐρήσοιμι πολλὰ καὶ καλὰ ἐπισταμένους. καὶ τούτου μὲν οὐκ ἐφύεσθην, ἀλλ' ἠπίσταντο ἃ ἐγὼ οὐκ ἠπίστάμην καὶ μου ταύτῃ σοφώτεροι ἦσαν. ἀλλ', ὦ ἄνδρες Ἀθηναῖοι, ταυτόν μοι ἔδοξαν ἔχειν ἀμάρτημα, ὅπερ καὶ οἱ ποιηταί, καὶ οἱ ἀγαθοὶ δημιουργοί· διὰ τὸ τὴν τέχνην καλῶς ἐξεργάζεσθαι ἕκαστος ἡξίου καὶ τὰλλα τὰ μέγιστα σοφώτατος εἶναι, καὶ αὐτῶν αὕτη ἡ πλημμέλεια ἐκείνην τὴν σοφίαν ἀπέκρυπτεν.

Parse τελευτῶν, ἐμαυτῷ.

2. Translate :

Μεγάλα δ' ἔγωγε ὑμῖν τεκμήρια παρέξομαι τούτων, οὐ λόγους, ἀλλ' ὃ ὑμεῖς τιμᾶτε, ἔργα. ἀκούσατε δὴ μου τὰ ἐμοὶ ξυμβεβηκότα, ἵν' εἰδῆτε ὅτι οὐδ' ἂν ἐνὶ ὑπείκῃ μοι παρὰ τὸ δίκαιον δείσας θάνατον, μὴ ὑπέικων δὲ ἅμ' ἂν καὶ ἀπολοίμην. ἐρῶ δὲ ὑμῖν φορτικά μὲν καὶ οὐ δικανικά, ἀληθῆ δέ. ἐγὼ γάρ, ὦ Ἀθηναῖοι, ἄλλην μὲν ἀρχὴν οὐδεμίαν πώποτε ἤρξα ἐν τῇ πόλει, ἐβούλευσα δέ· καὶ ἔτυχεν ἡμῶν ἡ φυλὴ Ἀντιοχίς πρυτανεύουσα, ὅτε ὑμεῖς τοὺς δέκα στρατηγούς τοὺς οὐκ ἀνελομένους τοὺς ἐκ τῆς ναυμαχίας ἐβούλεσθε ἀθρόους κρίνειν, παρανόμως, ὡς ἐν τῷ ὑστέρῳ χρόνῳ πᾶσιν ὑμῖν ἔδοξε. τότε ἐγὼ μόνος τῶν πρυτάνεων ἠναντιώθην ὑμῖν μηδὲν ποιεῖν παρὰ τοὺς νόμους καὶ ἐναντία ἐψηφισάμην.

Explain δικανικά, πρυτανεύουσα.

What historical event is here alluded to?

3. Translate :

Ἐμοὶ δὲ οὔτε ἐξιόντι ἔωθεν οἴκοθεν ἠναντιώθη τὸ τοῦ θεοῦ σημεῖον, οὔτε ἠνίκα ἀνέβαινον ἐνταυθαὶ ἐπὶ τὸ δικαστήριον, οὔτ' ἐν τῷ λόγῳ οὐδαμοῦ μέλλοντί τι ἐρεῖν. καίτοι ἐν ἄλλοις λόγοις πολλαχοῦ δὴ με ἐπέσχε λέγοντα μεταξὺ· νυνὶ δὲ οὐδαμοῦ περὶ ταύτην τὴν πράξιν οὔτ' ἐν ἔργῳ οὐδενὶ οὔτ' ἐν λόγῳ ἠναντιώταί μοι. τί οὖν αἴτιον εἶναι ὑπολαμβάνω; ἐγὼ ὑμῖν ἐρῶ· κινδυνεύει γάρ μοι τὸ ξυμβεβηκὸς τοῦτο ἀγαθὸν γεγονέναι, καὶ οὐκ ἔσθ' ὅπως ἡμεῖς ὀρθῶς ὑπολαμβάνομεν, ὅσοι οἰόμεθα κακὸν εἶναι τὸ τεθνάναι.

Explain τὸ τοῦ θεοῦ σημεῖον.

"All will agree that the speech should have been put into the mouth not of Socrates, but of some other person defending him." Comment on this.

4. Translate and explain :

τὰ μετέωρα, ὦ τᾶν, τὴν γραφὴν, τιμῶμαι, ἀντιτιμῶμαι, δίκην ὀφλὼν, ἀποψηφίζομαι.

5. Write out a short life of Socrates.

TUESDAY, October 7, 1884. 9—11½.

VIRGIL, AENEID, BOOKS IX. X.

(A)

N.B. Candidates are required to satisfy the Examiners in the questions as well as in translation.

I. TRANSLATE and, where necessary, explain the following passages :

- (i) quae cuique est fortuna hodie, quam quisque secutur spem,
Tros Rutulusne fuat, nullo discrimine habebit.
- (ii) tum pater omnipotens, rerum cui summa potestas,
inquit.

Distinguish between *potestas* and *potentia*.

- (iii) tum vero exterritus amens
conclamat Nisus, nec se celare tenebris
amplius aut tantum potuit perferre dolorem.

What is the force of *per* in *perferre*?

- (iv) nec longe, Cissea durum
inmanemque Gyan, sternentis agmina clava,
deiecit leto : nihil illos Herculis arma,
nec validae *iuvare* manus genitorque Melampus
Alcidae comes usque gravis dum terra labores
praebuit.

What is the construction of *nihil*?

- (v) et mecum ingentis oras evolvite belli.
- (vi) *macte* nova virtute, puer : sic itur ad astra,
dis genite et geniture deos.

Parse *itur*, and state the rule which is exemplified by its use here.

- (vii) quo sequar? aut quae nunc *artus* avolsaque membra
et funus lacerum tellus habet?

In what different senses is *funus* used in this book?

II. Translate as closely as possible in good English :

- (i) quid me erepto, saevissime, nato
terres? haec via sola fuit, qua perdere *posses*.
nec mortem horremus, nec divom parcimus ulli.
desine : nam venio moriturus, et haec tibi porto
dona prius. dixit, telumque *intorsit* in hostem ;
inde *aliud* super atque aliud figitque, volatque
ingenti gyro ; sed sustinet aureus umbo.

- (ii) hanc Genetrix *faciem* miserata refecit,
et dedit esse deas, aevumque agitare sub undis.
at puer Ascanius muro fossisque tenetur
tela inter media atque horrentis Marte Latinos.
iam loca iussa tenet *forti* permixtus Etrusco
Arcas eques. medias illis opponere turmas,
ne castris *iungant*, certa est sententia Turno.

In what different senses is *medius* used?

- (iii) Euryalus phaleras Rhamnetis et aurea bullis
cingula, Tiburti Remulo ditissimus olim
quae mittit dona, hospitio cum *iungeret* absens,
Caedicus; ille suo moriens dat habere nepoti;
post mortem bello Rutuli pugnaque potiti;
haec rapit, atque humeris nequiquam fortibus aptat.
Tum galeam Messapi habilem cristisque decoram
induit. excedunt castris, et tuta capessunt.

To what class of verbs does *capessunt* belong?

III. Explain clearly, in order, the mythological and geographical allusions in the following passages (*without translating them*), and where possible give the modern names of the places mentioned:

- (i) adnuit, et totum nutu tremefecit Olympum.
(ii) quam miseram tenuit non Ilia tellus
mecum excedentem, non moenia regis Acestae.
(iii) iure omnia bella
gente sub Assaraci fato ventura *resident*.
(iv) cum fera Karthago Romanis arcibus olim
exitium magnum atque Alpes inmittet apertas.
(v) est Paphus, Idaliumque tibi, sunt alta Cythera.
(vi) et tris quos Idas pater et patria Ismara mittit,
per varios sternit casus.
(vii) qua rex Clusinis advectus Osinius oris.

IV. Parse fully, in order, the words in *italics* in all the passages of the paper.

TUESDAY, October 7, 1884. 9—11½.

VIRGIL, AENEID, BOOKS IX. X.

(B)

N.B. Candidates are required to satisfy the Examiners in the questions as well as in translation.

I. TRANSLATE and, where necessary, explain the following passages :

- (i) sua cuique *exorsa* laborem
fortunamque ferent. rex Iuppiter omnibus idem.
- (ii) quis deus in fraudem, quae dura potentia nostra
egit?

Distinguish between *potentia* and *potestas*.

- (iii) tu tamen interea calido mihi sanguine poenas
persolves amborum inquit; simul ense *recluso*
ibat in Euryalum.

What is the force of *per* in *persolves*?

- (iv) haud temere est visum. conclamat ab agmine Volscens:
state, viri, quae causa viae? quive estis in armis?
quove tenetis iter? nihil illi tendere contra,
sed celerare fugam in silvas et fidere nocti.

What is the construction of *nihil*?

- (v) sensit enim nimia caede atque cupidine *ferri*.
- (vi) expellere tendunt
nunc hi, nunc illi; certatur limine in ipso
Ausoniae.

Parse *certatur*, and state the rule which is exemplified by its use here.

- (vii) heu, terra ignota canibus *date* praeda Latinis
alutibusque iaces, nec te tua funere mater
produxi.

In what different senses is *funus* used in this book?

II. Translate as closely as possible in good English :

- (i) quid, o pulcherrime coniunx,
sollicitas aegram et tua tristia dicta timentem?
si mihi, quae quondam fuerat, quamque esse decebat,
vis in amore foret, non hoc mihi namque *negares*,
omnipotens, quin et pugnae subducere Turnum,
et Dauno possem incolumem servare parenti.
nunc pereat, Teucrisque pio det sanguine poenas.

- (ii) tum Pallas *biugis* fugientem Rhoetea *praeter*
traiecit. hoc spatium tantumque morae fuit Ilo;
Ilo namque procul validam *direxerat* hastam:
quam medius Rhoeteus intercipit, optume Teuthra,
te fugiens fratremque Tyren; curruque *volutus*
caedit semianimis Rutulorum *calcibus* arva.

In what different senses is *medius* used?

- (iii) ingenti clamore per omnis
condunt se Teucri portas, et moenia complent,
namque ita discedens praeceperat optumus armis
Aeneas: si qua interea fortuna fuisset,
neu struere *auderent* aciem, neu credere campo;
castra modo et tutos servarent *aggere* muros,
ergo, etsi conferre manum pudor iraque monstrat,
obiiciunt portas tamen et praecepta facessunt.

To what class of verbs does *facessunt* belong?

III. Explain clearly, in order, the mythological and geographical allusions in the following passages (*without translating them*), and where possible give the modern names of the places mentioned:

- (i) quod tua cara parens domito te poscit Olympo.
(ii) nec solos tangit Atridas
iste dolor, *solisque* licet capere arma Mycenis.
(iii) dum domus Aeneae Capitoli immobile saxum
accolit.
(iv) magna dicione iubeto
Karthago premat Ausoniam: nihil urbibus inde
obstabit Tyriis.
(v) est Amathus, est celsa mihi Paphus, atque Cythera,
Idaliaeque domus.
(vi) hic Curibus, fidens primaevo corpore, Clausus
advenit.
(vii) venerat antiquis Corythi de finibus Acron.

IV. Parse fully, in order, the words in italics in all the passages of the paper.

TUESDAY, October 7, 1884. 1—3½.

PLUTARCH. THEMISTOCLES.

(A)

Candidates are requested to satisfy the Examiners in questions as well as in translation.

I. TRANSLATE:

ἐπαινείται δ' αὐτοῦ καὶ τὸ περὶ τὸν δίγλωττον ἔργον ἐν τοῖς πεμφθείσιν ὑπὸ βασιλέως ἐπὶ γῆς καὶ ὕδατος αἴτησιν. ἐρμηνέα γὰρ ὄντα συλλαβὼν διὰ ψηφίσματος ἀπέκτεινεν, ὅτι φωνὴν Ἑλληνίδα βαρβάροις προστάγμασιν ἐτόλμησε χρῆσαι. ἔτι δὲ καὶ τὸ περὶ Ἀρθμιον τὸν Ζελεΐτην Θεμιστοκλέους γὰρ εἰπόντος καὶ τούτου εἰς τοὺς ἀτίμους καὶ παῖδας αὐτοῦ καὶ γένος ἐνέγραψαν, ὅτι τὸν ἐκ Μήδων χρυσὸν εἰς τοὺς Ἕλληνας ἐκόμισε. μέγιστον δὲ πάντων τὸ καταλῦσαι τοὺς Ἑλληνικοὺς πολέμους καὶ διαλλάξαι τὰς πόλεις ἀλλήλαις πείσαντα τὰς ἔχθρας διὰ τὸν πόλεμον ἀναβαλέσθαι πρὸς ὃ καὶ Χεῖλεων τὸν Ἀρκάδα μάλιστα συναγωνίσασθαι λέγουσι.

II. Parse in the preceding passage the following words, explaining their construction in the sentence:

ἔργον, προστάγμασιν, ἐκόμισε, πείσαντα, Χεῖλεων.

III. Translate:

πρῶτος μὲν οὖν λαμβάνει ναῦν Λυκομήδης, ἀνὴρ Ἀθηναῖος τριηραρχῶν, ἧς τὰ παράσημα περικόψας ἀνέθηκεν Ἀπόλλωνι δαφνηφόρῳ Φλυῆσιν. οἱ δ' ἄλλοι τοῖς βαρβάροις ἐξισούμενοι τὸ πλῆθος ἐν στενῷ κατὰ μέρος προσφερομένους καὶ περιπίπτοντας ἀλλήλοις ἐτρέψαντο μέχρι δειλῆς ἀντισχόντας, ὡς εἶρηκε Σιμωνίδης, τὴν καλὴν ἐκείνην καὶ περιβόητον ἀράμενοι νίκην, ἧς οὐθ' Ἕλλησιν οὔτε βαρβάροις ἐνάλιον ἔργον εἰργασται λαμπρότερον, ἀνδρεία μὲν καὶ προθυμία κοινῇ τῶν ναυμαχησάντων, γνώμη δὲ καὶ δεινότητι τῇ Θεμιστοκλέους.

IV. Parse in the preceding passage the following words, explaining their construction in the sentence:

τριηραρχῶν, ἀνέθηκεν, δειλῆς, περιβόητον, ἧς.

V. Translate:

(a) ἔπειθέ τις ὁ Θεμιστοκλῆς τῶν εὖ γεγονότων νεανίσκων καταβαίνοντας εἰς τὸ Κυνόσαργες ἀλείφεισθαι μετ' αὐτοῦ.

Explain the object of Themistocles in doing this. What was τὸ Κυνόσαργες?

(b) σύντονον δὲ αὐτὸν γεγονέναι χρηματιστὴν οἱ μὲν τινὲς φασὶ δι' ἐλευθεριότητα.

What is the meaning of δι' ἐλευθεριότητα?

(c) σημείον μὲν λαμβάνων τὸ τοῦ δράκοντος, ὃς ἀφανὴς ταῖς ἡμέραις ἐκείναις ἐκ τοῦ σηκοῦ δόκει γενέσθαι.

What was the story, and with what purpose did Themistocles make use of it?

(d) πόλεων μὲν οὖν τὴν Αἰγινήτων ἀριστεύσαι φησιν Ἡρόδοτος, Θεμιστοκλεῖ δέ, καίπερ ἄκοντες ὑπὸ φθόνου, τὸ πρωτεῖον ἀπέδωσαν ἅπαντες.

τὸ πρωτεῖον ἀπέδωσαν. How did this come to pass? Explain the construction of πόλεων.

(e) ἔφη ζητεῖν ἄνδρα χρημάτων δεόμενον μᾶλλον ἢ χρήματα ἀνδρός.

Explain the occasion of this remark.

(f) κατευξάμενος αἰεὶ τοῖς πολεμίοις τοιαύτας φρένας διδόναι τὸν Ἀριμάνιον, ὅπως ἐλαύνωσι τοὺς ἀρίστους ἐξ ἑαυτῶν.

Explain the circumstances. Who was ὁ Ἀριμάνιος?

VI. Translate, and briefly explain where necessary, the following words and phrases:

σύνιους—χορηγία ἄφθονος—Θετταλίας οὐπω μηδίζειν δοκούσης—θεῶν ἱερὰ καὶ πατέρων ἡρία—ἐντρυφῶντα τῇ μητρί—ἐν ταῖς ἀποσκευαῖς—καταστασιάζειν—τὴν λεωφόρον ἀφῆκεν.

VII. Who were Aristides, Simonides, Demaratus? Where were Epirus, Cyprus, Marathon? Quote any allusions in this book to these persons and places.

TUESDAY, October 7, 1884. 1—3½.

PLUTARCH. THEMISTOCLES.

(B)

Candidates are requested to satisfy the Examiners in questions as well as in translation.

I. TRANSLATE:

ἐναντιούμενον δ' αὐτῷ μάλιστα τῶν πολιτῶν Ἀρχιτέλους, ὃς ἦν μὲν ἐπὶ τῆς ἱερᾶς νεῶς τριήραρχος, οὐκ ἔχων δὲ χρήματα τοῖς ναύταις χορηγεῖν ἔσπευδεν ἀποπλεῦσαι, παρώξυνεν ἔτι μᾶλλον ὁ Θεμιστοκλῆς τοὺς τριηρίτας ἐπ' αὐτόν, ὥστε τὸ δεῖπνον ὑρπάσαι συνδραμόντας. τοῦ δ' Ἀρχιτέλους ἀθυμοῦντος ἐπὶ τούτῳ καὶ βαρέως φέροντος εἰσέπεμψεν ὁ Θεμιστοκλῆς πρὸς αὐτὸν ἐν κίστῃ δεῖπνον ἄρτων καὶ κρεῶν, ὑποθεὶς κάτω τάλαντον ἀργυρίου καὶ κελεύσας αὐτόν τε δειπνεῖν ἐν τῷ παρόντι καὶ μεθ' ἡμέραν ἐπιμεληθῆναι τῶν τριηριτῶν· εἰ δὲ μή, καταβοήσειν αὐτοῦ πρὸς τοὺς παρόντας, ὡς ἔχοντος ἀργύριον παρὰ τῶν πολεμίων. ταῦτα μὲν οὖν Φανίας ὁ Λέσβιος εἶρηκεν.

II. Parse in the preceding passage the following words, explaining their construction in the sentence:

πολιτῶν, ναύταις, συνδραμόντας, κρεῶν, καταβοήσειν.

III. Translate:

ἐν δὲ τούτῳ τοῦ ἀγῶνος ὄντος φῶς μὲν ἐκλάμψαι μέγα λέγουσιν Ἐλευσινίῳθεν, ἤχον δὲ καὶ φωνὴν τὸ Θριάσιον κατέχειν πεδίον ἄχρι θαλάττης, ὡς ἀνθρώπων ὁμοῦ πολλῶν τὸν μυστικὸν ἐξαγόντων Ἰακχον. ἐκ δὲ τοῦ πλήθους τῶν φθεγγομένων κατὰ μικρὸν ἀπὸ γῆς ἀναφερόμενον νέφος ἔδοξεν αὐτοῖς ὑπονοστεῖν καὶ κατασκήπτειν εἰς τὰς τριήρεις. ἕτεροι δὲ φαντάσματα καὶ εἰδῶλα καθορᾶν ἔδοξαν ἐνόπλων ἀνδρῶν ἀπ' Αἰγίνης ἀνατενεῖς τὰς χεῖρας ἐπεχόντων πρὸ τῶν Ἑλληνικῶν τριήρων· οὗς εἰκαζον Αἰακίδας εἶναι παρακεκλημένους εὐχαίῃς πρὸ τῆς μάχης ἐπὶ τὴν βοήθειαν.

IV. Parse in the preceding passage the following words, explaining their construction in the sentence:

φῶς, θαλάττης, ὁμοῦ, ἀνατενεῖς, εἰκαζον.

V. Translate:

(a) Φανίας μέντοι τὴν μητέρα τοῦ Θεμιστοκλέους οὐ Θράτταν ἀλλὰ Καρίνην, οὐδ' Ἀβρότονον ὄνομα ἀλλ' Εὐτέρπην ἀναγράφει.

Explain the construction of ὄνομα. Parse Θράτταν and Καρίνην.

(b) τὴν Λαυρεωτικὴν πρόσδοτον ἀπὸ τῶν ἀργυρείων μετάλλων ἔθος ἐχόντων Ἀθηναίων διανέμεσθαι.

Explain τὴν Λαυρεωτικὴν πρόσδοτον. What did Themistocles advise the Athenians to do with this?

(c) δ δ' ἦν μόνον ἀναγκαῖον ἐν τῷ παρόντι, τὴν πόλιν ἀφέντας ἐμφύναί ταῖς ναυσίν, οἱ πολλοὶ χαλεπῶς ἤκουον.

How did Themistocles induce the Athenians to do this?

(d) ὥς αἱ νῆες ἀντίπρῳροι προσπεισούσαι καὶ συνερεῖσσαι τοῖς χαλκώμασιν ἐνεσχέθησαν.

Explain χαλκώμασιν.

(e) ἀληθῆ λέγεις, εἶπεν, ἀλλ' οὐτ' ἂν ἐγὼ Σερίφιος ὢν ἐγενόμην εἰδυξος, οὔτε σὺ Ἀθηναῖος.

To what remark is this the reply?

(f) ἀτρέμα στενάξας εἶπεν Ὀφίς Ἕλληνας ὁ ποικίλος, ὁ βασιλέως σε δαίμων δεῦρο ἔγαγεν.

Explain the meaning and occasion of this remark.

VI. Translate, and briefly explain where necessary, the following words and phrases:

αἰνῶμαλος—κύνειαι—ἀπλῆται—ἀνεχώρησαν ἐκεῖθεν—ἄπρακτοι—ὥσπερ ἐν τραγῳδίᾳ μηχανὴν ἄρας—οἱ ἔφηροι—τὴν μητέρα τῶν θεῶν—χρηματίζεσθαι—φάρμακον ἐφύμερον.

VII. Who were Marstonius, Theopompus, Cimon? Where were Olympia, Phalerum, Thiermorylac? Quote any allusions in this book to these persons and places.

WEDNESDAY, October 8, 1884. 9—11½.

Candidates must satisfy the Examiners in each division of this paper. Answers to divisions (a) and (b) must be given up separately.

(a) LATIN GRAMMAR.

(A)

I. GIVE the gen. sing. of *comes*, the abl. sing. of *lacus*, the acc. pl. of *funus*, the gen. pl. of *materfamilias*, the abl. sing. of *femur*.

What is the gender of *salus*, *classis*, *murmur*, *quercus*, *cuspis*?

II. Write down, in full, the gen. sing. of *alter*, the acc. sing. of *idem*, the voc. sing. of *meus*, the acc. sing. of *quivis*, the acc. pl. of *tepens*.

Give the other degrees of comparison of *secus*, *pulcher*, *doctus*, *seignior*, *graviter*.

III. Write down and give the English of

the voc. sing. m. fut. part. of *morior*,

the 3rd sing. perf. ind. of *pango*,

the 3rd sing. perf. ind. of *haurio*,

the 3rd pl. perf. ind. of *tango*,

the 1st sing. fut. ind. of *possum*.

IV. Parse and give the English of *ovili*, *offulsit*, *fazo*, *crateras*, *miserere*, *scissa*, *obeat*, *crepidine*, *consere*, *occupat*.

V. What cases follow *inter*, *obtendo*, *juvo*, *patiens*, *incumbere*?

When is *qui* followed by the indicative?

How are effect, point of time, agency, respectively expressed in Latin?

(b) GREEK GRAMMAR.

I. GIVE the genitive singular of *τάχος*, *δόξα*, *Θεμιστοκλῆς*, and the accusative plural of *παῖς*, *κάταρσις*, *τάλαντον*. What is the gender of *δέλιωμα*, *τριήρης*, *καρπός*, *νήσος*?

II. Write down, in full, the accusative singular of *μέγας*, the accusative plural of *ψαυστός*, the genitive plural of *τίς*, the accusative of *σφῶν*, the accusative singular feminine of *οὗτος*.

Give the other degrees of comparison of *εὐλαβέστερος*, *νέος*, *ταχέως*.

What is the Greek, masculine feminine and neuter, for 'three', 'two hundred'?

III. Write down and give the English of

the imperf. indic. act. 3rd sing. of κατασκευάζω,
 the 1st aorist infin. pass. of λέγω,
 the aorist middle 3rd pl. of προστίθημι,
 the 1st aorist particip. act. nom. sing. masc. of αἶρω,
 the future inf. act. of μεθίστημι.

IV. Parse and give the English of

εὐνους, διαζῶσαι, πέρας, ὄψιν, κοπιᾶτε, προσπίπτου, κρύφα, μορίαν, διενόηθη,
 διό.

V. Explain the construction of the following sentence, briefly parsing each word :

ἐμοὶ μὲν οὖν πάντα πρέποντα ταῖς παρούσαις συμφοραῖς ἐστὶ, καὶ παρεσκευασ-
 μένος ἀφύγμαι δέξασθαι τε χάριν εὐμενῶς διαλλαττομένου καὶ παραιτεῖσθαι μνησικα-
 κούντος ὀργήν.

WEDNESDAY, October 8, 1884. 9—11½.

Candidates must satisfy the Examiners in each division of this paper. Answers to divisions
 (a) and (b) must be given up separately.

(a) LATIN GRAMMAR.

(B)

I. GIVE the gen. sing. of *ales*, the abl. sing. of *acus*, the acc. pl. of *pectus*, the
 gen. pl. of *paterfamilias*, the abl. sing. of *cuspis*.

What is the gender of *tellus*, *funis*, *ebur*, *pinus*, *sanguis*?

II. Write down in full the gen. sing. of *unus*, the acc. pl. of *idem*, the voc.
 sing. of *deus*, the acc. sing. of *quisque*, the acc. pl. of *recens*.

Give the other degrees of comparison of *ditissimus*, *feliciter*, *satis*, *senior*, *laetus*.

III. Write down and give the English of

the 2nd sing. imper. ind. of *reor*,
 the 2nd sing. perf. ind. of *tundo*,
 the 3rd sing. perf. ind. of *suadeo*,
 the 3rd pl. perf. ind. of *conticesco*,
 the 1st sing. fut. ind. of *eo*.

IV. Parse and give the English of *pictaī, effulsit, solare, cratera, adesis, perosos, negarat, poplite, fidiē, receptat.*

V. What cases follow *praeter, cedo, infero, ignarus, nitor*?

When is *qui* followed by the subjunctive?

How are purpose, duration of time, price, respectively expressed in Latin?

(b) GREEK GRAMMAR.

I. Give the genitive singular of *βάθος, Βοιωτία, Πανσανίας*, and the accusative plural of *εἰκών, ἀπαρχή, πρᾶγμα*. What is the gender of *γῆρας, πατρίς, κίνδυνος, πλῆθος*?

II. Write down, in full, the accusative singular of *πολύς*, the accusative plural of *ἀπόρρητος*, the dative plural of *τίς*, the accusative of *ὑμῶν*, the neuter plural nominative of *οὗτος*.

Give the other degrees of comparison of *μείζων, ἄξιος, πικρῶς*. What is the Greek, masculine feminine and neuter, for 'four', 'three hundred'?

III. Write down and give the English of
 the perf. part. acc. pl. masc. of *κτάομαι*,
 the 2nd aorist subj. 3rd pl. of *τυγχάνω*,
 the aorist inf. middle of *ἐπιτίθημι*,
 the imperf. indic. 3rd sing. of *θεάομαι*,
 the pres. opt. act. 3rd sing. of *έάω*.

IV. Parse and give the English of

οὗτω, δυσμένειαν, ιστόρηκεν, δέους, καταγωγόντες, ὀψέ, τειχισμῶ, κελευστάς, εἶρητο.

V. Explain the construction of the following sentence, briefly parsing each word:

ὁ δὲ φησιν Ὡ ξένη, νόμοι διαφέρουσιν ἀνθρώπων· ἄλλα δ' ἄλλοις καλά· καλὸν δὲ πᾶσι τὰ οἰκεῖα κοσμεῖν καὶ σώζειν. ὑμᾶς μὲν οὖν ἐλευθερίαν μάλιστα θαυμάζειν καὶ ἰσότητα λόγος.

WEDNESDAY, October 8, 1884. 1—3½.

(A)

TRANSLATE INTO ENGLISH:

(1) *Vetus est haec opinio, iudices, quae constat ex antiquissimis Graecorum litteris ac monumentis, insulam Siciliam totam esse Cereri et Liberæ consecratam. Hoc quum caeterae gentes sic arbitrantur, tum ipsis Siculis ita persuasum est, ut in animis eorum insitum atque innatum esse videatur. Nam et natas esse has in iis locis deas et fruges in ea terra primum repertas esse arbitrantur et raptam esse Liberam, quam eandem Proserpinam vocant, ex Hennensium nemore: qui locus, quod in media est insula situs, umbilicus Siciliae nominatur. quam quum investigare et conquirere Ceres vellet, dicitur inflammasse taedas iis ignibus, qui ex Aetnae vertice erumpunt: quas sibi quum ipsa praeferret, orbem omnem peragrasse terrarum. Hæc autem, ubi ea, quae dico, gesta esse memorantur, est loco perexcelso atque edito, quo in summo est aequata agri planities et aquae perennes, tota vero ab omni aditu circumcisa atque directa est: quam circa lacus lucique sunt plurimi atque laetissimi flores omni tempore anni, locus ut ipse raptum illum virginis, quem iam a puoris accepimus, declarare videatur.*

CIC. *Verr.* II. lib. iv. 48.

(2) *Aquila in sublimi quercu nidum fecerat;
 Feles cavernam nacta in media pepererat;
 Sus nemoris cultrix fetum ad imam posuerat.
 Tum fortuitum feles contubernium
 Fraude et scelestæ sic evertit malitiæ.
 Ad nidum scandit volucris: Pernicies, ait,
 Tibi paratur, forsân et miseræ mihi;
 Nam fodere terram quod vides quotidie
 Aprum insidiosum, quercum vult evertere,
 Ut nostram in plano facile progeniem opprimat.
 Terrore offuso et perturbatis sensibus
 Derepit ad cubile setosæ suis:
 Magno, inquit, in periculo sunt nati tui;
 Nam, simul exieris pastum cum tenero grege,
 Aquila est parata rapere porcellos tibi.
 Hunc quoque timore postquam complevit locum,
 Dolosa tuto condidit sese cavo.
 Inde evagata noctu suspensæ pede,
 Ubi ceca se replevit et prolem suam,
 Pavorem simulans prospicit toto die.
 Ruinam metuens aquila ramis desidet;
 Aper rapinam vitans non prodit foras.
 Quid multa? Inedia sunt consumpti cum suis.*

PHAEDRUS II. 4.

WEDNESDAY, October 8, 1884. 1—34.

(B)

TRANSLATE into ENGLISH:

(1) Ibi usque ad hoc tempus Syracusani festos dies anniversarios agunt celeberrimo virorum mulierumque conventu. Propter huius opinionis vetustatem, quod horum in iis locis vestigia ac prope incunabula reperiuntur deorum, mira quaedam tota Sicilia privatim ac publice religio est Cereris Hennensis. Etenim multa saepe prodigia vim eius numenque declarant: multis saepe in difficillimis rebus praesens auxilium eius oblatum est, ut haec insula ab ea non solum diligi, sed etiam incolis custodiri videatur. Nec solum Siculi, verum etiam caeterae gentes nationesque Hennensem Cererem maxime colunt. Etenim si Atheniensium sacra summa cupiditate expetuntur, ad quos Ceres in illo errore venisse dicitur frugesque attulisse: quantam esse religionem convenit eorum, apud quos eam natam esse et fruges invenisse constat? Itaque apud patres nostros atroci ac difficili rei publicae tempore, quum Ti. Graccho occiso magnorum periculorum metus ex ostentis portenderetur, P. Mucio L. Calpurnio consulibus, aditum est ad libros Sibyllinos: ex quibus inventum est, Cererem antiquissimam placari oportere.

CIC. *Verr.* II. lib. iv. 48.

- (2) Cani perpasto macie confectus lupo
 Forte occucurrit: dein salutatum invicem
 Ut restiterunt: Unde sic, quaeso, nites?
 Aut quo cibo fecisti tantum corporis?
 Ego, qui sum longe fortior, pereo fame.
 Canis simpliciter: Eadem est conditio tibi,
 Praestare domino si par officium potes.
 Quod? inquit ille. Custos ut sis liminis,
 A furibus tuearis et noctu domum.
 Ego vero sum paratus: nunc patior nives
 Imbresque in silvis asperam vitam trahens:
 Quanto est facilius mihi sub tecto vivere,
 Et otiosum largo satiari cibo?
 Veni ergo mecum. Dum procedunt, aspicit
 Lupo a catena collum detritum cani.
 Unde hoc, amice? Nihil est. Dic, quaeso, tamen.
 Quia videor acer, alligant me interdum,
 Luce ut quiescam, et vigilem nox quum venerit:
 Crepusculo solutus, qua visum est, vagor.
 Adfertur ultro panis; de mensa sua
 Dat ossa dominus; frustra jactant familia
 Et, quod fastidit quisque, pulmentarium.
 Sic sine labore venter impletur meus.

PHAEDRUS III. 7.

THURSDAY, *October 9, 1884.* 9—11½.

PALEY'S EVIDENCES OF CHRISTIANITY.

(A)

1. WRITE down Paley's Second Proposition.
 2. Quote (in Latin or English) passages from Tacitus and Juvenal referring to the Christians. What inferences are drawn from these passages?
 3. Where are Iconium, Lystra, Philippi, Thessalonica, Ephesus? What persecutions did St Paul endure at each of these places?
 4. What evidence of the sufferings of the early Christian Church, besides that contained in the New Testament, is given by the companions and immediate followers of the Apostles?
 5. Account for the parallelisms in language between the Gospels of St Matthew and St Luke.
 6. What evidence is there to show that the Scriptures were publicly read and expounded in the assemblies of the early Christians?
 7. What does Paley say about the miracles attributed to Apollonius of Tyana, Ignatius Loyola, and Francis Xavier?
 8. Explain the prophecy contained in Isaiah ch. liii. What other explanation has been offered, and why?
 9. How does profane history corroborate what is related in the New Testament about Archelaus and Sergius Paulus?
 10. Reply to the assertion that the early Christian apologists seldom refer to the miracles of our Lord.
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THURSDAY, October 9, 1884. 9—11½.

PALEY'S EVIDENCES OF CHRISTIANITY.

(B)

1. WRITE down Paley's First Proposition.
 2. Quote (in Latin or English) passages from Suetonius and Martial referring to the Christians. What inferences are drawn from these passages?
 3. Show how the epistles of St Paul corroborate the story of his sufferings given in the Acts of the Apostles.
 4. On what occasion was the circular letter of the Church of Smyrna written? For what purpose does Paley introduce it?
 5. How far is the genuineness of the historical books of the New Testament important or essential to Paley's argument?
 6. What opponents of Christianity, who attacked the Scriptures in the first four centuries, does Paley refer to, and for what purpose?
 7. How may the demon of Socrates and Lord Herbert's vision be accounted for?
 8. To what event does the prophecy contained in St Luke ch. xxi. refer? Give reasons for believing that the prophecy was written before the event.
 9. Mention any instances where profane history has been supposed to contradict the statements of the New Testament; and show that the contradiction does not exist.
 10. State and answer the objection which has been brought against Christianity from the manner of its revelation.
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THURSDAY, October 9, 1884. 9—11½.

LOGIC.

1. DISTINGUISH between singular and general terms, abstract and concrete terms, univocal and equivocal terms.

In the case of each of the following terms say whether it is singular or general, abstract or concrete, univocal or equivocal:—*honest, honesty, church, sound, oxygen, Socrates.*

2. Given two propositions having the same subject and the same predicate, what kinds of relation between them are possible?

If in controversy you think you are able to refute a given statement, is it better to do so by means of its contradictory or by means of its contrary? and why?

3. State the rules of Logical Division; and explain what is meant by a Cross Division.

4. Find in what figures the following moods are valid:—AAI, AII, IAI.

5. Explain what is meant by a Hypothetical Syllogism. What are the principal fallacies to be guarded against in arguing from a hypothetical major premiss?

6. Examine the following arguments; where they are valid, reduce them to syllogistic form; and where they are invalid, explain the nature of the fallacy:—

(a) His cowardice might have been inferred from his cruelty; for all cowards are cruel.

(b) None but members of the University are present; all who are present are members of the Union; therefore, all members of the Union are members of the University.

(c) No unjust man is happy; for all wise men are just, and no man who lacks wisdom is happy.

7. Point out some of the most important characteristics of a good observer.

8. Explain and illustrate the Method of Difference.

9. What is meant by *empirical* knowledge? With what kind of knowledge is it contrasted? and wherein consists its inferiority?

THURSDAY, October 9, 1884. 1—3½.

EUCLID.

(A)

1. DEFINE a straight line, a segment of a circle, and an oblong.

What is a postulate? Write out Euclid's postulates.

2. If the equal sides of an isosceles triangle be produced, the angles on the other side of the base are equal to one another.

3. If two triangles have two sides of the one equal to two sides of the other, each to each, but the base of the one greater than the base of the other, the angle contained by the sides of that which has the greater base, shall be greater than the angle contained by the sides equal to them, of the other.

ABC is an isosceles triangle whose vertex is A , and P is any point. If the angle PBC is greater than the angle PCB , then will the angle PAC be greater than the angle PAB .

4. To a given straight line apply a parallelogram, which shall be equal to a given triangle, and have one of its angles equal to a given rectilineal angle.

5. In obtuse-angled triangles, if a perpendicular be drawn from either of the acute angles to the opposite side produced, the square on the side subtending the obtuse angle is greater than the squares on the sides containing the obtuse angle, by twice the rectangle contained by the side on which, when produced, the perpendicular falls, and the straight line intercepted without the triangle, between the perpendicular and the obtuse angle.

If A be the vertex of an obtuse-angled isosceles triangle ABC , and BD the perpendicular from B on CA produced, then the square on BC shall be equal to twice the rectangle CA, CD .

6. If two circles touch one another internally, they shall not have the same centre.

7. Define the angle in a segment of a circle.

In equal circles, equal angles stand on equal circumferences, whether they be at the centres or circumferences.

8. If from any point without a circle there be drawn two straight lines, one of which cuts the circle, and the other meets it, and if the rectangle contained by the whole line which cuts the circle, and the part of it without the circle, be equal to the square on the line which meets the circle, the line which meets the circle shall touch it.

A straight line AB is divided at C so that the rectangle AB, BC is equal to the square on AC , and on BC as base is described an isosceles triangle BCD having its sides equal to AC . Prove that BD touches the circle which passes through A, C and D .

9. Equal triangles, which have one angle of the one equal to one angle of the other, have their sides about the equal angles reciprocally proportional.

THURSDAY, October 9, 1884. 1—3½.

EUCLID.

(B)

1. DEFINE a plane superficies, a semicircle, and a rhombus.

What is an axiom? Write out any six of Euclid's axioms.

2. If two angles of a triangle be equal to one another, the sides also which subtend, or are opposite to, the equal angles shall be equal to one another.

3. If two triangles have two sides of the one equal to two sides of the other each to each, but the angle contained by the two sides of one of them greater than the angle contained by the two sides equal to them, of the other, the base of that which has the greater angle shall be greater than the base of the other.

If the hypotenuse BC of a right-angled triangle ABC be produced to D , so that CD is equal to AB , then AD will be greater than BC .

4. Describe a parallelogram that shall be equal to a given triangle, and have one of its angles equal to a given rectilineal angle.

5. In acute-angled triangles, the square on the side subtending an acute angle, is less than the squares on the sides containing that angle, by twice the rectangle contained by either of these sides, and the straight line intercepted between the perpendicular let fall on it from the opposite angle, and the acute angle.

If A be the vertex of an acute-angled isosceles triangle ABC , and BD the perpendicular from B on AC , then the square on BC shall be equal to twice the rectangle AC, CD .

6. If two circles cut one another, they shall not have the same centre.

7. Define the angle of a segment of a circle.

In equal circles, the angles which stand on equal circumferences are equal to one another, whether they be at the centres or circumferences.

8. If from any point without a circle two straight lines be drawn, one of which cuts the circle, but does not pass through the centre, and the other touches it; the rectangle contained by the whole line which cuts the circle, and the part of it without the circle, shall be equal to the square on the line which touches it.

If two circles intersect at A and B , the tangents drawn to the circles from any point in AB produced are equal to one another.

9. Equal parallelograms, which have one angle of the one equal to one angle of the other, have their sides about the equal angles reciprocally proportional.

FRIDAY, October 10, 1884. 9—11½.

ARITHMETIC.

(A)

1. **SHEW** that the difference of the squares of the numbers three thousand and three, and one thousand and twenty-nine, is equal to the product of the sum and difference of these two numbers.

Write this product in words.

2. The total length of the lines of railway open in the United Kingdom in 1872 was 15814 miles: total of traffic receipts £51304114: total of working expenses £26293304. Find to the nearest penny the nett receipts per mile.

3. One field contains 24878 square yards, another 512750 square links: find by reducing each to acres, roods, perches, &c. the difference of their areas.

N.B. A chain 22 yards long contains 100 links.

4. Simplify:

$$(a) \quad 3\frac{1}{2} \times 5\frac{2}{3} - 2\frac{1}{10} \times 1\frac{2}{3} - 4\frac{1}{2} \times 3\frac{1}{8} + 1054\frac{1}{10}.$$

$$(b) \quad 1.254 + .008216 + 3.80418 + 2.93315.$$

5. Find *without* reducing the decimals to vulgar fractions the value of
 $.19140625$ of £4 + 1.90572916 of £2.

6. Find by Practice the cost of fencing a field 7 furlongs, 22 yds. 2 ft. 7 in. in circumference at £4. 10s. per furlong.

7. A bill for £603 drawn Oct. 4 at 4 months, is discounted Nov. 26 at $2\frac{1}{2}$ per cent. Find the discount, allowing the usual three days of grace.

8. The new ordnance maps are made on the scale of 25 inches to the mile. The map of a certain parish is 5 square feet in area. Find the number of acres in the parish.

9. In an examination *A* gets a second class with 45 per cent., whilst *B* fails with 23 per cent. of full marks. Between them they obtain 408 marks: find the number of full marks.

10. If 7 men and 5 boys can hoe 186 acres in $37\frac{1}{2}$ days working 11 hours a day: find how long it would take 5 men and 8 boys to hoe 50 acres working 10 hours a day, supposing a boy does two-thirds of the work of a man.

11. A man sells out £4015 Consols at 100½ and invests the proceeds in Midland 4 per cent. debenture stock, thereby increasing his annual income by £12. 17s. 8d. Find the price of the latter stock.

FRIDAY, October 10, 1884. 9—11½.

ARITHMETIC.

(B)

1. SHEW that the difference of the squares of the numbers five thousand and thirty-one, and two thousand four hundred and seven, is equal to the product of the sum and difference of these numbers.

Write this product in words.

2. The total length of the lines of railway open in the United Kingdom in 1882 was 18457 miles: total of traffic receipts £66537128: total of working expenses £36170436. Find to the nearest penny the nett receipts per mile.

3. One field contains 37317 square yards, another 769125 square links: find by reducing each to acres, roods, perches, &c. the difference of their areas.

N.B. A chain 22 yards long contains 100 links.

4. Simplify:

$$(\alpha) \quad 2\frac{1}{2} \times 3\frac{1}{4} - 3\frac{1}{2} \times 4\frac{1}{8} - 2\frac{1}{8} \times 5\frac{1}{2} + 1098\frac{1}{16}.$$

$$(\beta) \quad 3.28167 + .0004193 + 3.8961028 + .8218.$$

5. Find *without* reducing the decimals to vulgar fractions the value of
2.78125 of £2 + 1.2586805 of £3.

6. Find by Practice the value of a field containing 7A. 3R. 26P. at £36. 7s. 8½d. per acre.

7. A bill for £1812 drawn July 13 at 5 months, is discounted Oct. 4 at 3½ per cent. Find the discount, allowing the usual three days of grace.

8. The new ordnance maps are made on the scale of 25 inches to the mile. Find the number of square feet in the map of a parish containing 4800 acres.

9. In an examination A just gets a first class with 65 per cent., whilst B just passes with 26 per cent. of full marks. Between them they obtain 455 marks: find the number of marks necessary for a first class, and for a pass.

10. If 5 men and 8 boys can hoe 50 acres in 11 days working 10 hours a day: find how long it would take 21 men and 15 boys to hoe 558 acres working 11 hours a day, supposing a boy does two-thirds of the work of a man.

11. A man has £3333. 6s. 8d. Midland 4 per cent. debenture stock. He sells out at 120, and invests the proceeds in Consols, losing thereby £12. 17s. 8d. in annual income. Find the price of Consols.

FRIDAY, October 10, 1884. 1—3½.

ELEMENTARY ALGEBRA.

(A)

1. SIMPLIFY

$$(a-b)(a-c) + (a-c)(b-3c) + 4c(a-3c).$$

Find the value of

$$\{\sqrt{4a^2+3c^2} + \sqrt{5a^2+5b^2}\} \times \sqrt{8(b^2+c^2)},$$

when $a = -1$, $b = -2$, $c = 2$.

2. Divide

$$5x^5 - 17x^4 + 18x^3 - 22x^2 + 13x + 11 \text{ by } x^2 - 2x - 1.$$

3. Resolve into the simplest possible factors

$$(\alpha) \quad x^4 - 8x^2y^2 - 9y^4.$$

$$(\beta) \quad 25(x+y+z)^2 - (x-y-3z)^2.$$

$$(\gamma) \quad (a-c)(a+c) - b(2a-b).$$

4. Define the Lowest Common Multiple of two algebraical expressions.

Find the Lowest Common Multiple of

$$x^2y - 6xy^2 + 5y^3, \quad x^3 - 25y^3, \quad x^4 + 4x^2y - 5x^2y^2.$$

5. Simplify

$$(\alpha) \quad \frac{a+b}{a+5b} + \frac{a^2-b^2}{25b^2-a^2} - \frac{b-a}{a-5b}.$$

$$(\beta) \quad \frac{4x^2-6x+2}{4x^2-10x+6} \div \frac{4x^2-12x+8}{4x^2-14x+12}.$$

6. Solve the equations:

$$(1) \quad \frac{x+8}{5} - \frac{x+4}{2} = 4 - \frac{3x+16}{6} - \frac{x+10}{3},$$

$$(2) \quad \frac{x^2+2x}{3} - \frac{x}{2} - \frac{x+2}{4} = x \left(\frac{x+1}{3} - 1 \right) + 10,$$

$$(3) \quad \frac{2}{(x-4)(3x-4)} + \frac{1}{x-4} + 1 = 0,$$

$$(4) \quad 43xy = 20(15x-8y) = 43(15y-8x).$$

7. Find two numbers, such that the difference of their squares is equal to 17 times the sum of the numbers, and also equal to 29 times the difference of the numbers.

8. A rod whose length is 7 feet 6 inches is broken into three pieces, out of which a right-angled triangle can be formed whose area is 270 square inches. Find the lengths of its sides.

9. What is the meaning of a^0 , a^{-1} , $a^{\frac{1}{2}}$?

Simplify
$$\frac{a^{m-2n} \times a^{2m-p} \times (a^4)^{3n+p}}{a^{4m+3p}}.$$

10. If $xy + 1 : xz + 2 = y^2 + 1 : yz + 2$,
shew that $y = x$ or $2y = z$.

11. Shew how to sum an arithmetical series when the first and last terms and the number of terms are given.

Write down the arithmetical and geometrical means between 9 and 49.

Sum to 10 terms each of the series

(1) $3 - 5\frac{1}{2} - 14 - \&c.$

(2) $7 - 3\frac{1}{2} + 1\frac{3}{4} - \&c.$

FRIDAY, October 10, 1884. 1—3 $\frac{1}{2}$.

ELEMENTARY ALGEBRA.

(B)

1. SIMPLIFY $(a-b)(a+c) + (a+c)(b-4c) + 3c(a-4c).$

Find the value of $\{\sqrt{10(a^2+b^2)} + \sqrt{7a^2+c^2}\} \times \sqrt{10-10bc}$,
when $a = -1$, $b = 3$, $c = -3$.

2. Divide $7x^5 - 24x^4 + 3x^3 + 2x^2 - 7x - 2$ by $x^2 - 3x - 1$.

3. Resolve into the simplest possible factors

(α) $x^6 - 64y^6$;

(β) $9(x+y+z)^2 - 4(x-z)^2$;

(γ) $(a+b)(a-b) + c(2a+c).$

4. Define the Highest Common Factor of two algebraical expressions.

Find the Lowest Common Multiple of

$$x^2y - 5xy^2 + 4y^3, \quad x^2 - 16y^2 \quad \text{and} \quad x^4 + 3x^2y - 4x^2y^2.$$

5. Simplify

$$(a) \frac{a-b}{a-3b} + \frac{a+b}{a+3b} - \frac{b^2-a^2}{9b^2-a^2};$$

$$(b) \frac{9x^2-9x+2}{9x^2-15x+6} + \frac{9x^2-18x+8}{9x^2-21x+12}.$$

6. Solve the equations:

$$(1) \frac{x+3}{5} + \frac{x+5}{3} = \frac{x-1}{2} - \frac{3x+1}{6} + 4;$$

$$(2) \frac{x^2-1}{3} - \frac{x-1}{2} - \frac{x+1}{4} = (x-1) \left(\frac{x}{3} - 1 \right) + 10;$$

$$(3) \frac{2}{(x-3)(3x-1)} + \frac{1}{x-3} + 1 = 0;$$

$$(4) 17xy = 10(10x-4y) = 17(10y-4x).$$

7. Find two numbers, such that the difference of their squares is equal to 19 times the sum of the numbers, and is also equal to 27 times the difference of the numbers.

8. A rod whose length is 5 feet is broken into three pieces, out of which a right-angled triangle can be formed whose area is 120 square inches. Find the lengths of its sides.

9. What is the meaning of x^0 , x^{-1} , $x^{\frac{1}{2}}$?

Simplify

$$\frac{x^{2p+q} \times x^{p-4r} \times (x^3)^{q-2r}}{x^{4p-6r}}.$$

10. If $xy+3 : xz+1 = y^2+3 : yz+1$,

shew that

$$y = x \text{ or } y = 3z.$$

11. Shew how to sum a geometrical series when the first term, common ratio and number of terms are given.

Write down the arithmetical and geometrical means between 25 and 81.

Sum to 10 terms each of the series

$$(1) 5 - 7\frac{1}{2} - 20 - \&c.$$

$$(2) 9 - 4\frac{1}{2} + 2\frac{1}{4} - \&c.$$

ANSWERS.

PREVIOUS EXAMINATION.

FRIDAY, October 3, 1884.

ALGEBRA. (A.) (Page 9.)

1. 31.
2. $2ma$.
3. -765, or -255.
4. (1) 0; (2) n^2 ; (3) $\frac{405}{48}$; (3) 20.
6. £305, £410, £515.
7. 12 m. and $20\frac{4}{11}$ m. past 3 o'clock; $4\frac{4}{11}$ minutes.
9. 5, -4, $\bar{1}997$.
10. 48, 53.
11. $1\cdot40117$.

ALGEBRA. (B.) (Page 10.)

1. 58.
2. 10, or 3.
4. (1) 0; (2) n^2 ; (3) $\frac{181}{108}$; (4) 9.
6. £242, £300, £358.
7. 12 m. and $42\frac{2}{11}$ m. past 5 o'clock; $15\frac{2}{11}$ minutes.
9. 3, 4, $\bar{1}9996$.
10. 70, 74.
11. $2\cdot432881$.

FRIDAY, October 10, 1884.

ARITHMETIC. (A.) (Page 35.)

1. 7959168.
2. £1581. 11s. 3d.
3. $60\frac{2}{10}$ square yards.
4. (a) $1056\frac{1}{2}$; (b) 8.
5. £4. 11s. $6\frac{1}{2}$ d.
6. £31. 19s. $4\frac{5}{8}$ d.
7. £3.
8. $737\frac{7}{8}$.
9. 600.
10. 11 days.
11. 120.

ARITHMETIC. (B.) (Page 36.)

1. 19517312.
2. £1645. 5s. 4d.
3. $91\frac{7}{10}$ square yards.
4. (a) $1081\frac{1}{2}$; (b) 8.
5. £9. 6s. $9\frac{1}{2}$ d.
6. £287. 17s. $11\frac{3}{8}$ d.
7. £12.
8. $32\frac{3}{8}$.
9. 325, 130.
10. $37\frac{1}{2}$.
11. $100\frac{3}{8}$.

FRIDAY, October 10, 1884.

ELEMENTARY ALGEBRA. (A.) (Page 37.)

1. $a^2 - 9c^2$; 72.
2. $5x^2 - 7x^2 + 9x - 11$.
3. (a) $(x^2 + y^2)(x - 3y)(x + 3y)$; (b) $4(3x + 2y + z)(2x + 3y + 4z)$; (c) $(a - b + c)(a - b - c)$.
4. $x^2y(x - y)(x - 5y)(x + 5y)$.
5. (a) $\frac{a^2 - 9b^2}{a^2 - 25b^2}$; (b) $\frac{2x - 1}{2x - 2}$.
6. (1) -3; (2) 18; (3) $x = 2$ or $2\frac{1}{2}$; (4) $x = 5$, $y = 4$.
7. 23 and 6.
8. 39 inches, 36 inches, 15 inches.
9. a^{2n} .
11. 29 and 21. (1) $-352\frac{1}{2}$; (2) $4\frac{22}{11}$.

ELEMENTARY ALGEBRA. (B.) (Page 38.)

1. $a^2 - 16c^2$; 140.
2. $7x^2 - 3x^2 + x + 2$.
3. (a) $(x - 2y)(x + 2y)(x^2 - 2xy + 4y^2)(x^2 + 2xy + 4y^2)$. (b) $(5x + 3y + 2z)(x + 3y + 5z)$.
- (c) $(a + b + c)(a - b + c)$.
4. $x^2y(x - 4y)(x + 4y)(x - y)$.
5. (a) $\frac{a^2 - 5b^2}{a^2 - 9b^2}$; (b) $\frac{3x - 1}{3x - 2}$.
6. (1) $x = 2$; (2) $x = 19$;
- (3) $x = 1$ or $1\frac{1}{2}$; (4) $x = 5$, $y = 4$.
7. 23 and 24.
8. 10 inches, 24 inches, 26 inches.
9. a^{2n} .
11. 53 and 45. (1) $-512\frac{1}{2}$; (2) $5\frac{40}{11}$.

FINAL EXAMINATION FOR THE DEGREE OF BACHELOR OF MUSIC.

THURSDAY, December 4, 1884.

Paper Work, 10 to 12.

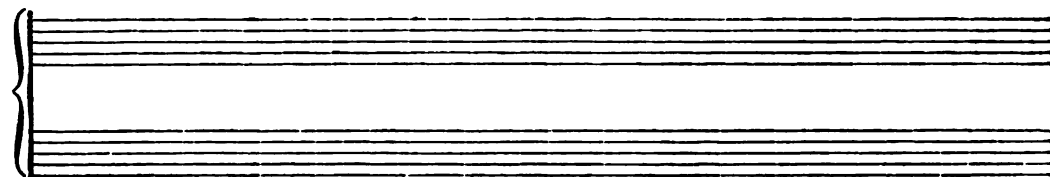
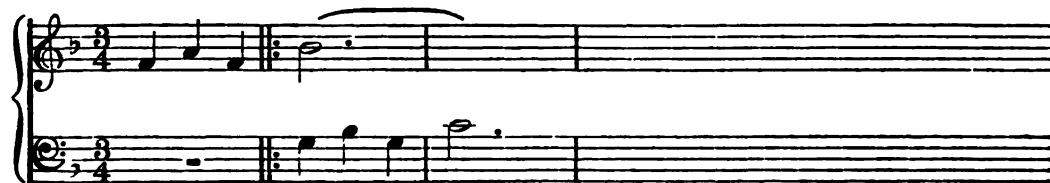
Viva Voce on Candidates' Exercises, 12 to 1 [during which hour Candidates who have not finished their Papers will be allowed to continue them, when not engaged with the Examiners.]

COUNTERPOINT.

1. To the following Canto Fermo add a Soprano part in the Fourth species, and an Alto part in the second. The score to consist of three parts. State whether or not the subject be available for an upper part.



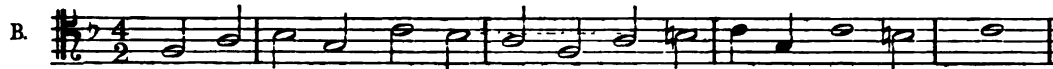
2. Continue the following Canon in the 7th below; make it perpetual, free as to intervals, including at least ten bars within the repeat, and concluding with a free Coda. Figure the Bass.



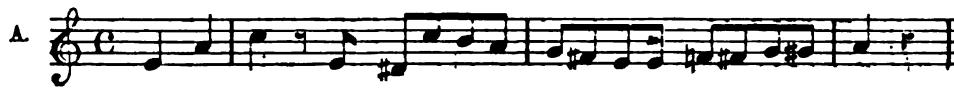
The image shows the first system of a musical score for a four-part setting of 'The Lord's Prayer' in G major, Op. 107, by Johannes Brahms. The score is for voices (Soprano, Alto, Tenor, Bass) and piano. The first system shows the beginning of the piece, with the piano accompaniment starting on a low G and the voices entering on a high G. The lyrics 'Vater unser im Himmel' are written below the vocal staves.

[illegible]

5. Write the Answers to the following Fugue Subjects. State whether each is Tonal or Real.



6. Write Subjects to precede the following Answers. State whether each is Tonal or Real.



7. Write a Fugue in Two parts on the following Subject. Besides the first Answer, introduce the Subject or Answer in the keys of E flat, A flat, and F minor. Work the Subject once in Stretto.



8. State the difference between the Lydian mode of the Greeks and that of the Christian Church. Write a Scale of an Octave in each and state whether any note in the Church Lydian may be inflected.

THURSDAY, December 4, 1884.

*Paper Work, 2 to 4.**Viva Viva Analysis, 4 to 5 [during which hour Candidates who have not finished their Papers will be allowed to continue them when not engaged with the Examiners.]*

HARMONY.

1. Add the inner parts to the following. Mark the bowing.

Violino Imo

Violino Secondo

Viola

Violoncello

2. State briefly the faults in the following passage

3. Write four parts according to the figuring above the following bass. State into what keys and at which bars the music modulates.

1 2 3 4

5 6 7 8 9

10 11 12

Explain the harmonies with reference to the roots of the chords in bars 6, 9, and 11.

4. Write a pianoforte accompaniment to the following. The right hand part to consist mainly of quavers in arpeggio intermixed with passing-notes.

The musical score for question 4 consists of two systems. Each system contains a single treble staff with a melody and a grand staff (treble and bass) for accompaniment. The melody is in G major, 4/4 time, and consists of two measures. The accompaniment staves are empty for the student to write.

INSTRUMENTATION.

5. Compare the tone of a flue-pipe and a reed-pipe.

6. Write the real notes of the following passages, (A) for English Horn, (B) for Bassett Horn, and give the foreign names by which these instruments are known.

(A)

The musical notation for passage (A) shows a single treble staff with a melody and an empty grand staff (treble and bass) for accompaniment. The melody is in G major, 4/4 time, and consists of two measures.

B)

The musical notation for passage (B) shows a single treble staff with a melody and an empty grand staff (treble and bass) for accompaniment. The melody is in G major, 4/4 time, and consists of two measures.

7. Transcribe the following extract in notes of the real pitch, using only the G and F clefs. Prefix the Italian names of the instruments. Name the work from which the passage is taken. Notes which sound as they are written need not be copied.

Musical score extract showing the following instruments and staves:

- FLUTE
- B♭ CLARINETTS
- BASSOONS
- HORN in F
- 1st VIOLIN
- 2nd VIOLIN
- VIOLA



. The Examination in playing from figured Bass and from Score will be from 9 to 11 on FRIDAY, December 5. Viva Voce in Counterpoint and Harmony during the same hours.

SECOND SPECIAL EXAMINATION IN MUSIC FOR THE ORDINARY B.A. DEGREE.

THURSDAY, December 4, 1884.

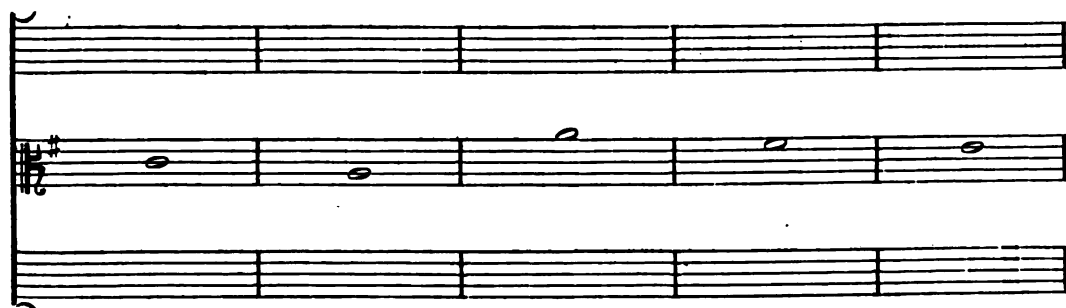
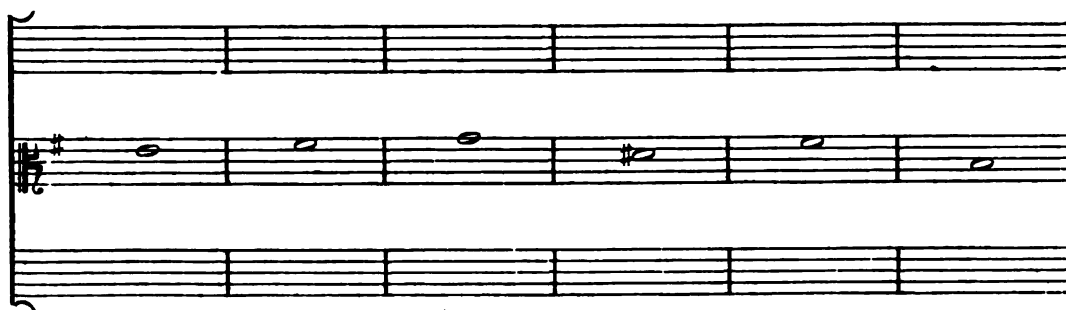
Paper Work, 10 to 12.

Viva Voce on Harmony, 12 to 1 [during which hour Candidates who have not finished their Papers have the option to continue them].

COUNTERPOINT.

1. WRITE a Counterpoint of the Second Species for Soprano in its proper Clef above the following Canto Fermo. The Score to consist of Two parts.

Write another Counterpoint of the Second Species for the Bass below the same Canto Fermo. The Score also to consist of Two parts. Figure the lower part of each exercise.



2. Write a Counterpoint of Fifth Species for Soprano and of the First Species for Alto each in its proper Clef. The Score to consist of Three parts. Figure the Bass.

Exercise 2 musical notation. It consists of three staves. The top two staves are empty for Soprano and Alto. The bottom staff is a Bass staff with a C-clef and a key signature of one flat (B-flat). It contains four measures, each with a single half note: B-flat, A, G, and F.

3. Write Counterpoint of the Fourth Species for Soprano above and of the Third Species, with four notes in each bar for Bass, below the following Canto Fermo.

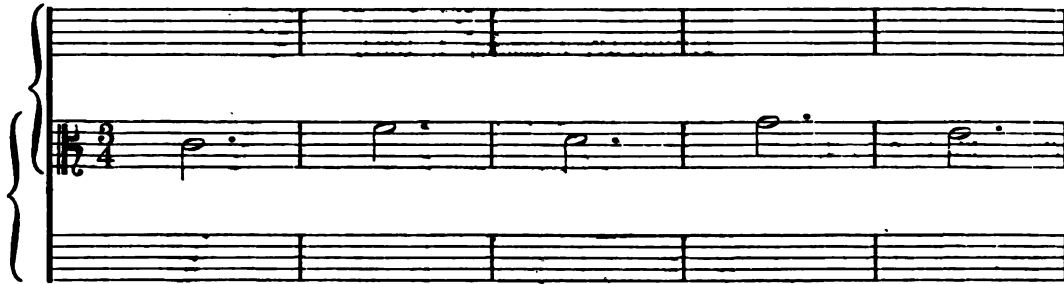
The Score to consist of Three parts, each part in its proper Clef. Figure the Bass.

Exercise 3 musical notation. It consists of three staves. The top staff is empty for Soprano. The middle staff is a Soprano staff with a C-clef and a key signature of one sharp (F-sharp). It contains a Canto Fermo with four measures, each with a single half note: F-sharp, G, A, and B. The bottom staff is empty for Bass.

4. Write a Canto Fermo, for Soprano in its proper Clef, above the following Counterpoint. Figure the Bass.

Exercise 4 musical notation. It consists of two staves. The top staff is empty for Soprano. The bottom staff is a Bass staff with a C-clef and a key signature of one sharp (F-sharp). It contains a counterpoint with four measures, each with a single half note: F-sharp, G, A, and B.

5. Write Double Counterpoint in the 15th, six notes against one, to the following Subject. The Counterpoint to be written, both above and below the Subject, and the lower part figured, in each case.



6. Why may not more than three 3rds or 6ths be used in succession in Two-part Counterpoint?

THURSDAY, December 4, 1884.

*Paper Work, 2 to 4.**Viva Voce on Counterpoint, 4 to 5 [during which hour Candidates who have not finished their Papers have the option to continue them].*

HARMONY.

1. Add parts for Alto and Tenor to the following. Write the words under each part.

Near Woodstock town, in Ox-ford-shire, As I walk'd forth to take the

Near Woodstock town, in Oxfordshire, As I walk'd forth to take the

air, To view the fields and meadows round, Methought I heard a dreadful sound.

air, To view the fields and meadows round, Methought I heard a dreadful sound.

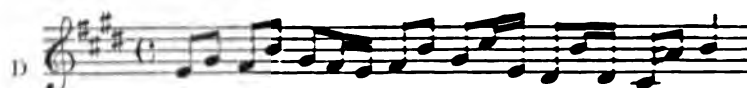
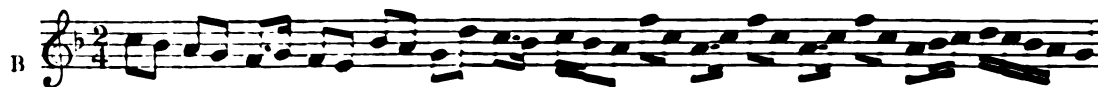
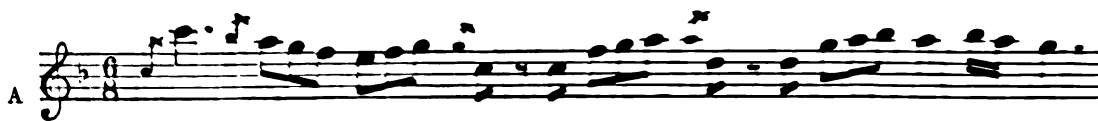
2. Add parts for Soprano, Alto and Tenor, each in its proper Clef, to the following Bass.

3. Add the Right-hand part to the following accompaniment, using Arpeggios and occasional Passing-notes.

4. Write parts for Violin, Viola and Bass to accompany the following Time Signature and Bass.



5. Add the Bar lines, and (when wanting, the Time Signatures to the following extracts. Name the works from which the passages are taken.



6. Add parts according to the figuring, for two Trebles and Tenor, above the following. Insert occasional passing-notes in any of the parts. All discords except passing-notes to be prepared. State into what key the music modulates, and where it returns to the primary key.

The first system of musical notation consists of four staves. The bottom staff is a bass line in C major, starting with a C-clef and a common time signature. It contains the following notes and figures: C4 (quarter), E4 (quarter), G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (beamed eighth notes), F#4 (quarter), E4 (quarter), D4 (half). Above the notes are the figures: 9 7 7 9 8 6 9 6 4 3. The top three staves are empty, intended for the two Treble and Tenor parts.

The second system of musical notation consists of four staves. The bottom staff is a bass line in C major, starting with a C-clef and a common time signature. It contains the following notes and figures: C4 (quarter), E4 (quarter), G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (beamed eighth notes), F#4 (quarter), E4 (quarter), D4 (half). Above the notes are the figures: #5 #5 7 #5 6 7. The top three staves are empty, intended for the two Treble and Tenor parts.

FRIDAY, December 5, 1884. 9 to 12.

ACOUSTICS.

1. WHAT is the essential character of wave-motion? State the connexion between wave-length and period of particle-vibration.

Draw a complete wave due to uniform transverse vibrations.

2. State Mariotte's law and describe the transmission through the air of pulses of condensation and rarefaction.

In what sense can we speak of the 'form' of a sound-wave?

3. Distinguish between absolute and relative pitch, and explain how each can be measured by means of the Syren.

Calculate the vibration-number of the note produced at a 12-hole row while a 16-hole row on the same Syren is giving middle C (vib-no. 264).

4. Show how, by experiments made with the pianoforte, we can analyse its sounds into their constituent partial-tones.

Two sounds are so related that the eighth partial-tone of one coincides with the ninth partial-tone of the other. Determine the interval between the two sounds.

5. Find the vibration-fraction of the interval between the seventh partial-tone of a key-note and the corresponding Minor Seventh of its scale. Which is the higher note of the two?

6. State Helmholtz's theory of musical quality.

How many sounds of different quality, but of the same pitch, can be formed with the first four partial-tones by variations of number and order only?

7. What is meant by segmental vibration? Draw figures showing what modes of such vibration are possible in a stopped organ-pipe.

Given 1125 feet per second as the velocity of sound in air, determine the length of a stopped pipe having middle C for its fundamental tone.

8. Under what conditions does the phenomenon called 'interference' occur? Describe an experiment showing it.

9. Illustrate roughly by a figure the beats of two simple tones differing slightly in pitch.

What becomes of beats when they are too rapid for separate recognition?

10. State Helmholtz's theory of consonance and dissonance for composite sounds, and deduce from it the general necessity for greater accuracy in the tuning of Octaves and Fifths than of Thirds and Sixths.

11. What law assigns the pitch of the first-order combination-tone for any two given simple primaries? State on what instrument combination-tones are specially prominent.

12. How does the necessity for 'tempering' arise? Describe the system of equal temperament, and state for which of the consonant intervals the tuning is, in its scale, the least perfect.

SECOND SPECIAL EXAMINATION IN THEOLOGY FOR THE ORDINARY B.A. DEGREE.

SATURDAY, November 29, 1884. 9—12.

THE EPISTLE TO THE ROMANS.

1. WHEN and where was the Epistle to the Romans written? Compare it as to style and matter with each of the other Epistles of the same group.

2. Explain the following passages in relation to St Paul's history, comparing other notices from his Epistles and from the Book of the Acts.

(a) ὥστε με ἀπὸ Ἱερουσαλήμ καὶ κύκλῳ μέχρι τοῦ Ἰλλυρικοῦ πεπληρωμέναι τὸ εὐαγγέλιον τοῦ χριστοῦ.

(b) νυνὶ δὲ πορεύομαι εἰς Ἱερουσαλήμ διακονῶν τοῖς ἁγίοις.

(c) ἀπελεύσομαι δι' ὑμῶν εἰς Σπανίαν.

(d) ἀσπάζεται ὑμᾶς Ἐραστος ὁ οἰκονόμος τῆς πόλεως.

3. Translate, with short notes on the words and phrases between asterisks only :

(a) ἀποκαλύπτεται γὰρ ὀργὴ θεοῦ ἀπ' οὐρανοῦ ἐπὶ πᾶσαν ἀσέβειαν καὶ ἀδικίαν ἀνθρώπων * τῶν τὴν ἀλήθειαν ἐν ἀδικίᾳ κατεχόντων *, διότι τὸ γνωστὸν τοῦ θεοῦ φανερόν ἐστιν ἐν αὐτοῖς, ὁ θεὸς γὰρ αὐτοῖς ἐφάνέρωσεν. τὰ γὰρ ἀόρατα αὐτοῦ ἀπὸ κτίσεως κόσμου τοῖς ποιήμασιν νοούμενα καθορᾶται, ἢ τε αἰδίοις αὐτοῦ δύνამις καὶ *θειότης *, εἰς τὸ εἶναι αὐτοὺς ἀναπολογήτους, διότι γινόντες τὸν θεὸν οὐχ ὡς θεὸν ἐδόξασαν ἢ ἠυχάριστησαν, ἀλλὰ ἐματαιώθησαν ἐν τοῖς διαλογισμοῖς αὐτῶν καὶ ἐσκοτίσθη ἡ ἀσύνετος αὐτῶν καρδία.

(b) ἄρα οὖν ὡς δι' ἐνὸς παραπτώματος εἰς πάντας ἀνθρώπους εἰς κατὰκριμα, οὕτως καὶ δι' ἐνὸς δικαιώματος εἰς πάντας ἀνθρώπους εἰς δικαίωσιν ζῆς· ὥστε γὰρ διὰ τῆς παρακοῆς τοῦ ἐνὸς ἀνθρώπου ἁμαρτωλοὶ κατεστάθησαν οἱ πολλοί, οὕτως καὶ διὰ τῆς ὑπακοῆς τοῦ ἐνὸς δίκαιοι κατασταθήσονται οἱ πολλοί. * νόμος δὲ παρεῖληθεν ἵνα πλεονάσῃ τὸ παράπτωμα *· οὐ δὲ ἐπλεόνασεν ἡ ἁμαρτία, ὑπερεπερίσσευσεν ἡ χάρις.

Distinguish between δικαίωμα and δικαίωσις.

(c) τὸ γὰρ ἀδύνατον τοῦ νόμου, ἐν ᾧ ἡσθένει διὰ τῆς σαρκός, ὁ θεὸς τὸν ἑαυτοῦ υἱὸν πέμψας † ἐν ὁμοιώματι σαρκὸς ἁμαρτίας † καὶ * περὶ ἁμαρτίας * κατέκρινε τὴν ἁμαρτίαν ἐν τῇ σαρκί, ἵνα τὸ δικαίωμα τοῦ νόμου πληρωθῇ ἐν ἡμῖν τοῖς μὴ κατὰ σάρκα περιπατοῦσιν ἀλλὰ κατὰ πνεῦμα· οἱ γὰρ κατὰ σάρκα ὄντες τὰ τῆς σαρκὸς φρονοῦσιν, οἱ δὲ κατὰ πνεῦμα τὰ τοῦ πνεύματος.

Paraphrase the words marked †...†. Quote parallels.

(d) ἀλήθειαν λέγω ἐν Χριστῷ, οὐ ψεύδομαι, συναρτυρούσης μοι τῆς συνειδήσεώς μου ἐν πνεύματι ἀγίῳ, ὅτι λύπη μοί ἐστιν μεγάλη καὶ ἀδιάλειπτος ὁδύνη τῇ καρδίᾳ μου. * ἡνύχον γὰρ ἀνάθεμα εἶναι * αὐτὸς ἐγὼ ἀπὸ τοῦ χριστοῦ ὑπὲρ τῶν ἀδελφῶν μου τῶν συγγενῶν μου κατὰ σάρκα, οἵτινες εἰσιν Ἰσραηλείται, ὧν ἡ υἰοθεσία καὶ ἡ δόξα καὶ αἱ διαθήκαι καὶ ἡ νομοθεσία καὶ ἡ λατρεία καὶ αἱ ἐπαγγελίαι, ὧν οἱ πατέρες, † καὶ ἐξ ὧν ὁ χριστὸς τὸ κατὰ σάρκα, ὁ ὧν ἐπὶ πάντων, θεὸς εὐλογητὸς εἰς τοὺς αἰῶνας. ἀμήν †.

Discuss the arrangement and interpretation of the words marked †...†.

(e) λέγω γὰρ διὰ τῆς χάριτος τῆς δοθείσης μοι παντὶ τῷ ὄντι ἐν ὑμῖν μὴ ὑπερφρονεῖν παρ' ὃ δεῖ φρονεῖν, ἀλλὰ φρονεῖν εἰς τὸ σωφρονεῖν, ἐκάστω ὡς ὁ θεὸς ἐμέρισεν μέτρον πίστεως. καθάπερ γὰρ ἐν ἐνὶ σώματι πολλὰ μέλη ἔχομεν, τὰ δὲ μέλη πάντα οὐ τὴν αὐτὴν ἔχει πρᾶξιν, οὕτως οἱ πολλοὶ ἐν σῶμά ἐσμεν ἐν Χριστῷ, * τὸ δὲ καθ' εἰς * ἀλλήλων μέλη. ἔχοντες δὲ χαρίσματα κατὰ τὴν χάριν τὴν δοθεῖσαν ἡμῖν διάφορα, εἴτε * προφητείαν κατὰ τὴν ἀναλογίαν τῆς πίστεως *, εἴτε διακονίαν ἐν τῇ διακονίᾳ, εἴτε ὁ διδάσκων ἐν τῇ διδασκαλίᾳ.

4. Translate and explain :

- (a) ἐπιστεύθησαν τὰ λόγια τοῦ θεοῦ.
- (b) ὑπηκούσατε δὲ ἐκ καρδίας εἰς ὃν παρεδόθητε τύπον διδαχῆς.
- (c) ἡ γὰρ ἀποκαρδοκία τῆς κτίσεως τὴν ἀποκάλυψιν τῶν υἱῶν τοῦ θεοῦ ἀπεκδέχεται.
- (d) οὐκ ἔκαμψαν γόνυ τῇ Βαάλ.
- (e) πλήρωμα οὖν νόμου ἡ ἀγάπη.

5. ὁ ἐσθίων τὸν μὴ ἐσθίοντα μὴ ἐξουθενείτω. Trace the history in the Apostolic Church of the controversy referred to. How does St Paul deal with it here? How elsewhere?

6. Explain St Paul's references in this Epistle to Abraham, and to Pharaoh; and comment on his use of the figure of the wild olive tree.

7. ὅσα γὰρ προεγράφη.... Complete the sentence in Greek or English and give the previous context. Illustrate St Paul's teaching in this passage from his writings and by his practice in this Epistle.

8. Discuss the following words :

ἀπαρχή, ἐριθία, ἱλαστήριον, λατρεύειν, πάρεσις, πληροφορεῖσθαι, πώρωσις, χρηματίζειν.

9. Retranslate into the Original Greek :

(a) We were buried therefore with him through baptism into death: that like as Christ was raised from the dead through the glory of the Father, so we also might walk in newness of life.

(b) For Isaiah saith, Lord, who hath believed our report? So belief cometh of hearing, and hearing by the word of Christ.

(c) The revelation of the mystery which hath been kept in silence through times eternal, but now is manifested.

SATURDAY, November 29, 1884. 2—5.

(A) SAMUEL I. II.

1. EXEMPLIFY from the life and work of Samuel the chief functions of the Prophetic order.
2. Point out resemblances between the Song of Hannah and one of the Hymns of the New Testament. Give an account of other poems contained in these Books.
3. From what original sources is it probable that the history of David contained in these Books is taken?
4. Give an account of the wars between the Israelites and the neighbouring nations during the reigns of Saul and David.
5. Trace the influence of Joab on the life and fortunes of David. Examine the statement that "during all the latter years of his reign David was little more than a nominal king."
6. Quote passages from the Psalms which appear to illustrate any of the incidents recorded in these Books.
7. Comment upon the following passages, giving the context in each case:
 - (a) If one man sin against another, the judge shall judge him: but if a man sin against the Lord, who shall entreat for him?
 - (b) Behold, to obey is better than sacrifice, and to hearken than the fat of rams.
 - (c) The priest answered David and said, There is no common bread under mine hand, but there is hallowed bread.
 - (d) The soul of my lord shall be bound in the bundle of life with the Lord thy God; and the souls of thine enemies them shall he sling out as out of the middle of a sling.
 - (e) Tarry at Jericho until your beards be grown and then return.
 - (f) We must needs die and are as water spilt on the ground which cannot be gathered up again.
 - (g) All these things did Araunah as a king give unto the king.

(B) PSALMS I—XLI.

1. POINT out some of the chief characteristics of Hebrew Poetry. Quote from the first Book of the Psalms examples of the impressions made upon the Psalmist by the phenomena of nature.

2. Give examples of the different forms of Parallelism which may be traced in the Psalter.

3. Account for the presence of some verses in the Prayer-book Version of Ps. xiv. (The fool hath said in his heart) which are not found in the Authorized Version. Mention and account for any other interpolations in the Prayer-book Version of these Psalms.

4. Quote the answers made in the Psalms to the following questions:

- (a) Who will shew us any good?
- (b) Lord, who shall abide in thy tabernacle? who shall dwell in thy holy hill?
- (c) Who is this king of glory?

5. Shew from the New Testament that passages contained in these Psalms were regarded as prophetic of the Messiah.

6. Estimate the value of the historical notices contained in the Inscriptions to some of these Psalms. Give reasons for or against the correctness of any one of them.

7. Comment upon the following passages, correcting the rendering where necessary:

(a) I will declare the decree: the Lord hath said unto me, Thou art my Son; this day have I begotten thee.

(b) Save Lord: let the king hear us when we call.

(c) This is the generation of them that seek him, that seek thy face, O Jacob.

(d) Be ye not as the horse, or as the mule, which have no understanding: whose mouth must be held with bit and bridle, lest they come near unto thee.

(e) Sacrifice and offering thou didst not desire; mine ears hast thou opened: burnt-offering and sin-offering hast thou not required. Then said I, Lo, I come: in the volume of the book it is written of me, I delight to do thy will, O my God: yea thy law is written in my heart.

MONDAY, December 1, 1884. 9—12.

(A) OUTLINES OF ENGLISH CHURCH HISTORY.

[Not more than three questions in each of the Divisions I. II. III. of (A) are to be attempted.]

I.

1. TRACE the connexion of Early British Christianity with the general history of the Church in relation to (1) Church organization, (2) heresy, (3) persecution.
2. Give some account of Archbishop Theodore, shewing his permanent influence on the Church of England.
3. Trace the relations of the Papacy to the English Church during the century 1150—1250.
4. Describe the origin, work and influence of the Preaching Orders.
5. Give a short account of Aidan—Bede—Boniface—Hugh of Lincoln—Cardinal Othobon.

II.

1. Give some account of the Lollard movement after the death of Wycliffe.
2. Contrast the Reformation of the English Church with the Continental Reformation. Analyse the character and influence of Archbishop Cranmer.
3. Trace the relations of the Civil to the Ecclesiastical power during the reigns of Henry VIII. and Elizabeth.
4. What was the state of religious parties in England at the time of the Hampton Court Conference? Give some account of the Conference and its result.
5. Give a short account of Pecock—Tyndale—Latimer—Andrews—Cosin.

III.

1. Describe the legislation of Charles the Second's reign with regard to the English Church and Nonconformists.
2. Give some account of the chief Nonjuring Divines, and trace the history and effects of the schism.

3. Describe the work of George Whitfield and John Wesley, and their relations to the English Church.
 4. Give a brief account of the missionary work of the English Church till 1830.
 5. What is meant by Cathedrals of the Old and of the New Foundations? Give any particulars as to the history of the sees of Bristol—Durham—Ely—Lincoln.
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(B) THE LIFE AND TIMES OF LANFRANC AND ANSELM.

1. WHAT was the origin and what were the chief results of the Crusades? How do they illustrate the political and religious character of the times?
 2. Write a short account of the monastery of Bec, shewing how its character was influenced by Lanfranc and Anselm, and how it influenced the contemporary life of the Church.
 3. Trace the change that took place during this period in the relative power of the Pope and the King in Ecclesiastical matters in England, and shew what share the Archbishops of Canterbury had in bringing about this change.
 4. Describe the Glastonbury Riots. What good result was due to them?
 5. Describe the circumstances attending Anselm's appointment to the Archbishopric; and account for his conduct on that occasion.
 6. Trace Anselm's relations with Henry I. How is the conduct of either justified or condemned (a) by the result, and (b) by the needs and opinions of the time?
 7. Write notes on Wulfstan—Eadmer—Lanfranc's *Decreta pro ordine Benedicti*—Anselm's *Proslogion*, *Cur Deus homo*.
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MONDAY, December 1, 1884. 2—5.

THE GOSPEL ACCORDING TO ST MARK.

1. DESCRIBE briefly four of the chief MSS. which contain this Gospel.
2. What is meant by saying that each Synoptist is independent of the other two? What are the principal marks of independence found in St Mark?
3. What indications are there in this Gospel as to the readers for whom it was originally intended?
4. What notes does St Mark furnish towards determining the occasion and character of our Lord's "Last Supper"? How do the Synoptists and St John appear to differ on this point?
5. Translate the following passages, commenting on the words and phrases between asterisks only:

(a) ἐγένετο Ἰωάννης ὁ βαπτίζων ἐν τῇ ἐρήμῳ κηρύσσων * βάπτισμα μετανοίας εἰς ἄφεσιν ἁμαρτιῶν *. καὶ ἐξεπορεύετο πρὸς αὐτὸν πᾶσα ἡ Ἰουδαία χώρα καὶ οἱ Ἱεροσολυμεῖται πάντες, καὶ ἐβαπτίζοντο ὑπ' αὐτοῦ ἐν τῷ Ἰορδάνῃ ποταμῷ * ἐξομολογούμενοι * τὰς ἁμαρτίας αὐτῶν. καὶ ἦν ὁ Ἰωάννης ἐνδεδυμένος τρίχας καμήλου καὶ ζώνην δερματίνην περὶ τὴν ὀσφύν αὐτοῦ, καὶ ἔσθων ἀκρίδας καὶ μέλι ἄγριον. καὶ ἐκήρυσσεν λέγων Ἔρχεται ὁ ἰσχυρότερός μου ὀπίσω μου, οὗ οὐκ εἰμὶ ἰκανὸς κύψας λῦσαι τὸν ἱμάντα τῶν ὑποδημάτων αὐτοῦ.

How did John's baptism differ in significance from the rite practised by the Jews?

(b) ἔτι αὐτοῦ λαλοῦντος ἔρχονται * ἀπὸ τοῦ ἀρχισυναγώγου * λέγοντες ὅτι Ἡ θυγάτηρ σου ἀπέθανεν· τί ἔτι * σκύλλεις * τὸν διδάσκαλον; ὁ δὲ Ἰησοῦς * παρακούσας * τὸν λόγον λαλούμενον λέγει τῷ ἀρχισυναγώγῳ Μὴ φοβοῦ, μόνον πίστευε.

(c) καὶ ἔλεγον αὐτῷ Ἐν ποίᾳ ἐξουσίᾳ ταῦτα ποιεῖς; ἢ τίς σοι ἔδωκεν τὴν ἐξουσίαν ταύτην ἵνα ταῦτα ποιῇς; ὁ δὲ Ἰησοῦς εἶπεν αὐτοῖς Ἐπερωτήσω ὑμᾶς ἓνα λόγον, καὶ ἀποκρίθητέ μοι, καὶ ἐρῶ ὑμῖν ἐν ποίᾳ ἐξουσίᾳ ταῦτα ποιῶ· † τὸ βάπτισμα τὸ Ἰωάννου ἐξ οὐρανοῦ ἦν ἢ ἐξ ἀνθρώπων †; ἀποκρίθητέ μοι. καὶ διελογίζοντο πρὸς ἑαυτοὺς λέγοντες Ἐὰν εἴπωμεν Ἐξ οὐρανοῦ, ἐρεῖ Διὰ τί οὖν οὐκ ἐπιστεύσατε αὐτῷ; ἀλλὰ εἴπωμεν Ἐξ ἀνθρώπων;—ἐφοβοῦντο τὸν ὄχλον, ἅπαντες γὰρ εἶχον τὸν Ἰωάννην ὄντως ὅτι προφήτης ἦν. καὶ ἀποκριθέντες τῷ Ἰησοῦ λέγουσιν Οὐκ οἶδαμεν. καὶ ὁ Ἰησοῦς λέγει αὐτοῖς Οὐδὲ ἐγὼ λέγω ὑμῖν ἐν ποίᾳ ἐξουσίᾳ ταῦτα ποιῶ.

How do the words marked † † meet the question put to our Lord?

(d) ὁ δὲ εἰδὼς αὐτῶν τὴν ὑπόκρισιν εἶπεν αὐτοῖς Τί με πειράζετε; φέρετέ μοι * δηνᾶριον * ἵνα ἴδω. οἱ δὲ ἠνεγκαν. καὶ λέγει αὐτοῖς Τίνος ἡ εἰκὼν αὕτη καὶ ἡ ἐπιγραφή; οἱ δὲ εἶπαν αὐτῷ Καίσαρος. ὁ δὲ Ἰησοῦς εἶπεν Τὰ Καίσαρος * ἀπόδοτε * Καίσαρι καὶ τὰ τοῦ θεοῦ τῷ θεῷ. καὶ ἐξεθαύμαζον ἐπ' αὐτῷ.

How did this answer defeat the intention of the Pharisees and Herodians?

(e) ὕστερον δὲ ἀνακειμένοις αὐτοῖς τοῖς ἑνδεκα ἐφανερώθη, καὶ ὠνείδισεν τὴν ἀπιστίαν αὐτῶν καὶ σκληροκαρδίαν ὅτι τοῖς θεασαμένοις αὐτὸν ἐγηγερμένον ἐκ νεκρῶν οὐκ ἐπίστευσαν, καὶ εἶπεν αὐτοῖς Πορευθέντες εἰς τὸν κόσμον ἅπαντα κηρύξατε τὸ

εὐαγγέλιον πάσῃ τῇ κτίσει. ὁ πιστεύσας καὶ βαπτισθεὶς σωθήσεται, ὁ δὲ ἀπιστήσας κατακριθήσεται. σημεῖα δὲ τοῖς πιστεύουσιν ἀκολουθήσει ταῦτα, ἐν τῷ ὀνόματί μου δαιμόνια ἐκβαλοῦσιν, γλώσσαις λαλήσουσιν, καὶ ἐν ταῖς χερσὶν ὄφεις ἀροῦσιν καὶ θανάσιμόν τι πίωσιν οὐ μὴ αὐτοὺς βλάβῃ, ἐπὶ ἀρρώστους χεῖρας ἐπιθήσουσιν καὶ καλῶς ἔξουσιν.

Is this appearance of our Lord recorded in any other Gospel? If so with what varying details?

6. Comment on the grammatical construction of the following sentences:

(a) καὶ παρακαλεῖ αὐτὸν πολλὰ λέγων ὅτι Τὸ θυγάτριόν μου ἐσχάτως ἔχει. ἵνα ἐλθὼν ἐπιθῇ τὰς χεῖρας αὐτῇ ἵνα σωθῇ καὶ ζήσῃ.

(b) ἀμὴν λέγω, εἰ δοθήσεται τῇ γενεᾷ ταύτῃ σημεῖον.

(c) ὁ δὲ Ἰησοῦς εἶπεν αὐτῷ Τό Εἰ δύνῃ, πάντα δυνατὰ τῷ πιστεύοντι.

(d) μηκέτι εἰς τὸν αἰῶνα ἐκ σοῦ μηδεὶς καρπὸν φάγοι.

7. Translate and explain the following passages, giving the occasion of each:

(a) οὐδεὶς ἐπίβλημα ῥάκους ἀγνάφου ἐπιδράπτει ἐπὶ ἱμάτιον παλαιόν· εἰ δὲ μή, αἶρει τὸ πλήρωμα ἀπ' αὐτοῦ τὸ καινὸν τοῦ παλαιοῦ, καὶ χεῖρον σχίσμα γίνεται.

(b) καὶ ἔλεγεν αὐτῇ Ἄφες πρῶτον χορτασθῆναι τὰ τέκνα, οὐ γάρ ἐστιν καλὸν λαβεῖν τὸν ἄρτον τῶν τέκνων καὶ τοῖς κυναρίοις βαλεῖν.

(c) τὸ δὲ καθίσαι ἐκ δεξιῶν μου ἢ ἐξ εὐωνύμων οὐκ ἔστιν ἐμὸν δοῦναι, ἀλλ' οἷς ἡτοίμασται.

(d) ὃ ἔσχεν ἐποίησεν, προέλαβεν μυρίσαι τὸ σῶμά μου εἰς τὸν ἐνταφιασμόν.

8. Comment on various readings in the following passages:

(a) ὅς ὃ ἂν βλασφημήσῃ εἰς τὸ πνεῦμα τὸ ἅγιον, οὐκ ἔχει ἄφεσιν εἰς τὸν αἰῶνα, ἀλλ' ἔνοχός ἐστιν αἰωνίου κρίσεως.

(b) ὁ γὰρ Ἡρώδης ἐφοβεῖτο τὸν Ἰωάννην, εἰδὼς αὐτὸν ἄνδρα δίκαιον καὶ ἅγιον, καὶ συνετῆρει αὐτόν, καὶ ἀκούσας αὐτοῦ πολλὰ ἐποίει, καὶ ἡδέως αὐτοῦ ἤκουε.

(c) ὅτι οὐκ εἰσπορεύεται αὐτοῦ εἰς τὴν καρδίαν ἀλλ' εἰς τὴν κοιλίαν καὶ εἰς τὸν ἀφεδρῶνα ἐκπορεύεται, καθαρίζον πάντα τὰ βρώματα.

(d) καὶ σὺν αὐτῷ σταυροῦσι δύο ληστὰς, ἓνα ἐκ δεξιῶν καὶ ἓνα ἐξ εὐωνύμων αὐτοῦ. καὶ ἐπληρώθη ἡ γραφὴ ἣ λέγουσα, Καὶ μετὰ ἀνόμων ἐλογίσθη.

9. Retranslate into GREEK:

(a) And they watched him, whether he would heal him on the sabbath day; that they might accuse him.

(b) And ye shall be hated of all men for my name's sake: but he that endureth to the end, the same shall be saved.

(c) There came Joseph of Arimathæa, a councillor of honourable estate, who also himself was looking for the kingdom of God; and he boldly went in unto Pilate, and asked for the body of Jesus.

10. Write short notes on the following words and phrases:

βασιλεία τοῦ θεοῦ—μυστήριον—σπεκουλάτωρ—Ἑλληνὶς Συροφοινίκισσα—ἄμφοδον—ἀλάβαστρον μύρου νάρδου πιστικῆς—συνέδριον.

TUESDAY, December 2, 1884. 9—12.

HEBREW. 1 SAMUEL I—XIX.

I. TRANSLATE:

(a) וַתַּעֲלֶה עִמָּהּ בָּאִשׁ גְּמֻלָּתוֹ בְּפָרִים שְׁלֵשָׁה וְאַיֶּפֶה אֶחָת קָמַח וְגִבְלֵי יִין
 תָּבִיאֶהוּ בֵּית-יְהוָה שָׁלוֹ וְדָגָעַר נָעַר : וַיִּשְׁחָטוּ אֶת-דָּפָר וַיָּבֹאוּ אֶת-דָּגָעַר אֶל-עָלִי :
 וַתֹּאמֶר בִּי אֲדֹנִי חַי נַפְשְׁךָ אֲדֹנִי אֲנִי הָאִשָּׁה הַנִּצָּבֶת עִמָּכָה בָּזָה לְהִתְפַּלֵּל אֶל-
 יְהוָה : אֶל-דָּגָעַר הָיָה הִתְפַּלֵּלָתִי וַיִּתֵּן יְהוָה לִי אֶת-שְׂאֵלָתִי אֲשֶׁר שְׂאֵלָתִי מֵעַמּוֹ :
 וְגַם אֲנֹכִי הַשְׂאֵלָתִי לַיהוָה כָּל-דְּהִימִים אֲשֶׁר הָיָה הוּא שְׂאֵל לַיהוָה וַיִּשְׁתַּחֲוֶה שָׁם
 לַיהוָה :

וַיִּשְׁתַּחֲוֶה—הַשְׂאֵלָתִי—חַי—גְּמֻלָּתוֹ Parse

(b) מְקִים מַעֲפָר דָּל מֵאֲשַׁפֵּת יָרִים אֲבִיוֹן לְהוֹשִׁיב עַם-נְדִיבִים וְכִפָּא כְבוֹד
 יִנְחִלֵם בִּי לַיהוָה מִצְקֵי אֶרֶץ וַיֵּשֶׁת עֲלֵיהֶם תִּבֵּל : רַגְלֵי חֲסִידוֹ יִשְׁמַר וְרִשְׁעִים
 בַּחֲשֵׁךְ יִדְמּוּ כִּי-לֹא בָכַח יִגְבֵּר-אִישׁ : יְהוָה יַחֲוֶה מְרִיבֵי עֹלָם בְּשִׁמְיָם יִרְעַם יְהוָה
 יִדִּין אֲפִסִּי-אֶרֶץ וַיִּתֵּן עֹז לְמַלְכוֹ וַיִּירָם קֶרֶן מִשִּׁיחוֹ :

יַחֲוֶה—יִדְמּוּ—וַיֵּשֶׁת—יִנְחִלֵם—מְקִים Parse

(c) וְלָמָּה תִּכְבְּדוּ אֶת-לִבְבְּכֶם בָּאִשׁ כְּבָדוֹ מִצָּרִים וּפְרַעְיָה אֶת-לִבְכֶם הֲלוֹא
 בָּאִשׁ הִתְעַלֵּל בָּדָם וַיִּשְׁלַחֻם וַיִּלְכּוּ : וְעַתָּה קָחוּ וַעֲשׂוּ עֲגֹלָה חֲדָשָׁה אֶחָת וַשְׁתִּי
 פָּרוֹת עֲלוֹת אֲשֶׁר לֹא-עֹלָה עֲלֵיהֶם עַל וְאַסְרֹתָם אֶת-דְּפֹרוֹת בַּעֲגֹלָה וְהִשִּׁיבֹתָם בְּנֵיהֶם
 מֵאַחֲרֵיהֶם רַבִּיתָהּ : וְלִקְחֹתָם אֶת-אֲרוֹן יְהוָה וְנָתַתָּם אֹתוֹ אֶל-הָעֲגֹלָה וְאֵת כָּלִי הַזֶּה
 אֲשֶׁר הִשְׁבִּיתָם לוֹ אֲשֶׁם תְּשִׁימוּ בְּאָרְצוֹ מִצְדוֹ וְשִׁלַּחְתָּם אֹתוֹ וְהָלַךְ :

Point out and parse the words in this passage formed respectively from the roots
 עַל-עוֹל-עוֹלָה

(d) וַיֹּאמֶר זֶה יְהוָה מִשְׁפַּט הַמֶּלֶךְ אֲשֶׁר יִמְלֹךְ עֲלֵיכֶם אֶת־בְּנֵיכֶם יִקַּח וְשֵׁם לוֹ בְּמִרְכַּבְתּוֹ וּבִפְרָשָׁיו וְרָצוּ לִפְנֵי מִרְכַּבְתּוֹ : וְלִשְׁוֹם לוֹ שְׂרֵי אֲלָפִים וְשְׂרֵי חֲמִשִּׁים וְלִחְרֹשׁ חֲרִישׁוֹ וְלִקְצֹר קִצְרוֹ וְלַעֲשׂוֹת כָּל־מַלְחָמָתוֹ וְכָל־י רָכָבוֹ : וְאֶת־בְּנוֹתֵיכֶם יִקַּח לְרִקְחוֹת וְלִמְכּוֹת וְלֵאֲפוֹת : וְאֶת־שְׂדוֹתֵיכֶם וְאֶת־בְּרִמְיֶכֶם וְיִיתִיכֶם הַטּוֹבִים יִקַּח וְנָתַן לַעֲבָדָיו : וְהָרְעִיכֶם וְכִרְמִיכֶם יַעֲשֶׂה וְנָתַן לְסָרִיסָיו וְלַעֲבָדָיו : וְאֶת־עַבְדֵיכֶם וְאֶת־שִׁפְחוֹתֵיכֶם וְאֶת־בְּחוּרֵיכֶם הַטּוֹבִים וְאֶת־חֲמוּרֵיכֶם יִקַּח וַעֲשֶׂה לְמִלְאכָתּוֹ : צֹאנְכֶם יַעֲשֶׂה וְאֵתָם תְּהַיִּדְלוּ לַעֲבָדִים :

Give the LXX. rendering for the word בְּחוּרֵיכֶם in this passage, and shew how the word must be altered to bear that meaning.

(e) 22 וַיֹּאמֶר שְׁמוּאֵל הַחֹפֶץ לַיהוָה בְּעֵלּוֹת וּבַחַיִּים כְּשֹׁמֵעַ בְּקוֹל יְהוָה הִנֵּה שָׁמַע מִזְבֵּחַ טוֹב לְהִקְשִׁיב מִחֶלֶב אֵילִים : 23 כִּי הִטְאֵת־קֶסֶם מְרִי וְאָן וּתְרָפִים הִפְצִיר יַעֲן מֵאִסֶּת אֶת־דְּבַר יְהוָה וַיִּמָּאֶסֶךְ מִמֶּלֶךְ : 24 וַיֹּאמֶר שְׁאֹל אֶל־שְׁמוּאֵל חֲטָאתִי כִּי־עֲבַרְתִּי אֶת־פִּי־יְהוָה וְאֶת־דְּבָרֶיךָ כִּי יֵרָאֵתִי אֶת־דְּעֹם וְאֶשְׁמַע בְּקוֹלָם : 25 וְעַתָּה שָׂא נָא אֶת־חֲטָאתִי וְשׁוּב עִמִּי וְאֶשְׁתַּחֲוֶה לַיהוָה :

Explain fully any difficult words or expressions in verse 23.

2. Translate with short explanations of difficult words or expressions.

- (a) וְהִנֵּעַר שְׁמוּאֵל הַלֵּךְ וְגָדַל וְטוֹב נָם עִם־יְהוָה וְגַם עִם־אֲנָשִׁים :
- (b) לָכֵן נָאִם יְהוָה אֱלֹהֵי יִשְׂרָאֵל אָמַר אֶמְרָתִי בֵּיתְךָ וּבֵית אָבִיךָ יִתְהַלְכוּ לִפְנֵי עַד־עוֹלָם וְעַתָּה נֹאֵם־יְהוָה חֲלִילָה לִּי כִּי־מִכְבְּדִי אֶכְבֵּד וּבְזִי יִקְלָו :
- (c) וַיִּשְׁרְנָה הַפְּרוֹת בְּדֶרֶךְ עַל־דֶּרֶךְ בֵּית שֶׁמֶשׁ בְּמִסְלָה אַחַת הָלְכוּ הַלֵּךְ וַיִּנְעוּ וְלֹא־סָרוּ יָמִין וּשְׂמָאוֹל וּסְרָנִי פִלְשִׁתִּים הֹלְכִים אַחֲרֵיהֶם עַד־גְּבוּל בֵּית שֶׁמֶשׁ :
- (d) וַיֵּרָם הַמִּצֵּב אֶת־הַשּׁוֹק וְהָעֵלִיָּה וַיֵּשֶׁם לִפְנֵי שְׁאֵל וַיֹּאמֶר הִנֵּה הַנִּשְׁאָר שִׁים לִפְנֵיךְ אֲכַל כִּי לְמוֹעֵד שְׂמֹד־לָךְ לֵאמֹר הָעַם קָרָאתִי וַיֹּאכַל שְׁאֵל עִם־שְׁמוּאֵל בְּיוֹם הַהוּא :

(e) וַתְּהִי חֲרָדָה בַּמַּחֲנֶה בַשָּׂדֶה וּבְכָל־דָּעוּם הַמַּצֵּב וְהַמְשִׁחִית חָרְדוּ גַם־דָּמָה
וַתִּרְצוּ הָאָרֶץ וַתְּהִי לְחֲרָדַת אֱלֹהִים : וַיֵּרָא הַצִּפִּים לְשֹׁאֵל בִּנְיָמִן וְהִנֵּה
הַרְמוֹן נָמוֹג וְלֶךְ וְהִלֵּם :

(f) וַיִּשְׁלַח שֹׁאֵל מַלְאָכִים לִקְרַת אֶת־דָּוִד וַיֵּרָא אֶת־לִדְבַת הַגְּבִיָּאִים יִנְבָּאִם
וּשְׁמוּאֵל עֹמֵד נֹצֵב עֲלֵיהֶם וַתְּהִי עַל־מַלְאָכֵי שֹׁאֵל רוּחַ אֱלֹהִים וַיִּתְנַבְּאוּ גַם־דָּמָה :

3. Point the following, supplying the two principal accents:

(a) וַיָּבֹא אִישׁ אֱלֹהִים אֶל עָלִי וַיֹּאמֶר אֵלָיו כֹּה אָמַר יְהוָה הַגִּלְגָּל נִגְלִיתִי
אֶל בֵּית אַבִּיךָ בְּהִיוֹתָם בַּמִּצְרִים לְבֵית פְּרַעֲה : וּבֹדֵד אָתָּה מִכָּל שְׁבִטֵי יִשְׂרָאֵל
לִי לִכְהֵן לַעֲלֹת עַל מִזְבְּחִי לְהַקְטִיר קִמְרַת לִשְׂאֵת אֶפְרַד לִפְנֵי וְאַתָּה לְבֵית אַבִּיךָ
אֶת כָּל אֲשֵׁי בְנֵי יִשְׂרָאֵל : לְמָה תִּבְעֲטוּ בִּזְבָּחִי וּבִמְנַחֲתִי אֲשֶׁר צִוִּיתִי מֵעַן
וּתְכַבֵּד אֶת בְּנִיךְ מִמֶּנִּי לְהַבְרִיאֲכֶם מֵרֵאשִׁית כָּל מְנַחַת יִשְׂרָאֵל לַעֲמִי :

(b) וַיֹּאמֶר יְהוָה אֶל שְׁמוּאֵל עַד מָתִי אַתָּה מֵתֹאבֵל אֶל שֹׁאֵל וְאֲנִי
מֵאֲסִתִּיו מִמֶּלֶךְ עַל יִשְׂרָאֵל מִלֹּא קֶרֶךְ שֶׁמֶן וְלֶךְ אֲשַׁלַּח אֶל יוֹשֵׁי בֵּית הַלְחָמִי
כִּי רָאִיתִי בְּבִנְיָו לִי מֶלֶךְ : וַיֹּאמֶר שְׁמוּאֵל אֵיךְ אֵלֶּךְ וּשְׁמַע שֹׁאֵל וְהִרְגֵנִי
וַיֹּאמֶר יְהוָה עֲגִלַת בָּקָר תִּקַּח בְּיָדְךָ וְאָמַרְתָּ לִזְבֹּחַ לַיהוָה בָּאֲתִי :

4. Translate into Biblical Hebrew:

(a) And she named the child Ichabod, saying, The glory is departed from Israel: because the ark of God was taken, and because of her father in law and her husband. And she said, The glory is departed from Israel: for the ark of God is taken.

(b) Moreover as for me, God forbid that I should sin against the Lord in ceasing to pray for you: but I will teach you the good and the right way: only fear the Lord, and serve him in truth with all your heart: for consider how great things he hath done for you. But if ye shall still do wickedly, ye shall be consumed, both ye and your king.

SECOND SPECIAL EXAMINATION IN MORAL SCIENCES FOR THE ORDINARY B.A. DEGREE.

SATURDAY, November 29, 1884. 9—12.

1. EXPLAIN the principal difficulties which stand in the way of giving a definition of *Wealth*, for economic purposes. In describing the wealth of Italy most writers would omit the sunnier climate, and the superior voices of the people: why?

2. Taking the case of a great Railway Company show in detail the nature of the distinction between Fixed and Circulating Capital in its expenditure, and between Productive and Unproductive consumption in its expenditure and receipts.

3. In what other departments, besides Agriculture, can we trace the Law of Diminishing Return?

4. Explain the phrases 'Normal Value,' and 'Law of Demand,' illustrating them each by the example of a *watch*.

5. Do you consider the following objections to the Ricardian Theory of Rent to be sound?—(1) 'There never is any land which pays no rent,' (2) 'It is not true historically that the best land has been cultivated first.'

6. On what main grounds are the different rates of wages in different trades accounted for? Which of these do you think are likely to diminish, and which to increase?

7. Explain the principal causes why the Rate of Interest which was once 8 p.c. in England has come down to 4 or $3\frac{1}{2}$ p.c. Do you think such a change a ground of congratulation?

8. Mention the principal 'Media of Exchange' in this country, explaining to which of them, and why, you would confine the name of *Money*.

9. Explain the principal peculiarities of which economists have to take account in the estimation of Normal Value, in those cases where two or more distinct articles depend upon the same process of production.

SATURDAY, November 29, 1884. 2—5.

1. DESCRIBE the principal attacks which are made upon the Science of Political Economy, mentioning the sources from which such attacks proceed.

2. In what sense, and to what extent, is the statement true, that Wages are not an element in Cost Production?

3. Explain what you understand by *Credit*, showing in what ways exactly it increases Production. What are the limits at any given time, to the amount of Credit in a country?

4. It is sometimes stated that there is no reason why an inconvertible paper currency should be depreciated. Explain the grounds of this statement.

5. The Americans express fears of being undersold by cheap European labour. Examine this, theoretically, and by appeal to facts.

6. The Exchanges of any particular country, as a rule, fluctuate frequently. Why? and within what limits?

Is it possible for the quoted exchange to be permanently unfavourable?

7. Enumerate the principal accepted rules of Taxation, employing them to test the following:—(1) a tax on the keeping of dogs, (2) a tax on the manufacture of matches in England.

8. Examine theoretically the incidence of a tax on houses proportional to their value.

Say what you know about the actual nature and working of such taxes in England at present.

9. If you were arguing with a "Fair Trader" show how you would confute (or support) him, not on general theoretical grounds but by an examination in detail of our principal articles of Import.

MONDAY, *December 1, 1884.* 9—12.

POLITICAL ECONOMY.

1. EXPLAIN the following words, "Lastage," "Pontage," "Engrosser," "Fore-staller." What is "Effectual demand"?

2. From what causes was Agriculture in a depressed state after the fall of the Roman Empire? Are any of these causes still operative?

3. In what three ways did the growth and wealth of commercial towns contribute to the improvements of the country to which they belonged?

The cities drew their subsistence and materials for manufacture from the country, how came any of them to flourish so much more than it?

4. What are the two suggested tests whether the balance of trade is in favour of a country or no? Shew that they are fallacious.

5. What are the effects of giving a bounty on the exportation of corn?

Are all these effects produced by a bounty on sugar?

6. Explain how it is that nobody finally pays a tax on coinage if it be moderate.

7. Examine the argument in favour of protection, "that it can be advantageously introduced in a young country as a temporary expedient, since various industries that will ultimately prosper without protection require its aid in the early stages of their existence."

8. What was the system of the French Economists? Why did they favour free trade?

9. What advantages might be supposed to be gained by putting a duty on manufactured articles imported into this country and devoting the proceeds to lighten the burdens on land? Could these advantages follow?

SECOND SPECIAL EXAMINATION IN HISTORY FOR THE ORDINARY B.A. DEGREE.

SATURDAY, *November 29, 1884.* 9—12.

OUTLINES OF ENGLISH HISTORY.

1. DEFINE Investiture, and give some account of the controversy on this subject between the temporal and spiritual powers in England under the Norman Kings.
 2. How was the Great Charter obtained, and what leading principles of government are contained therein?
 3. It has been asserted that the division of the English parliament into an Upper and a Lower house has been the result of chance rather than of premeditation. How far can such an assertion be supported by an appeal to history?
 4. What opinions as to the rights of property were advocated by Wyclif? To what causes do you attribute the extinction of the Lollard movement?
 5. In what respects did the position of the Tudor sovereigns differ from that of their predecessors?
 6. Write brief notices of (1) a statesman, (2) an explorer, (3) a soldier, (4) a writer who flourished during the reign of Elizabeth.
 7. Under what circumstances were the following colonies planted: Virginia—Baltimore—New England?
 8. Give some account of the administration of Laud and Strafford, and discuss the justice of the impeachment of the latter.
 9. Give some account of the foreign policy pursued by England during Cromwell's administration.
 10. What events contributed to bring about the downfall of the Whig government in 1710?
 11. Examine the characteristics of Sir R. Walpole's administration.
 12. Give a brief account of *one* of the following:
 1. The letters of Junius.
 2. The Middlesex Election.
 3. Catholic Emancipation.
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SATURDAY, *November 29*, 1884. 2—5.

HALLAM'S CONSTITUTIONAL HISTORY.

1. WHAT were Benevolences? In whose reign were they abolished by statute? When were they last employed?
 2. What were the chief alterations made in the tenets of the English Church during the reign of Edward VI.?
 3. By what title did Elizabeth succeed to the English Throne? Shew how this affected her relations towards her Roman Catholic subjects.
 4. Mention the most important circumstances connected with Sir Thomas Shirley's case. To what alteration in the law did it lead?
 5. Give a sketch of the political character of King Charles I.
 6. What are the chief beneficial statutes passed by the Long Parliament?
 7. Give an account of the part taken by Monk in bringing about the Restoration.
 8. What were the chief charges in the impeachment of the Earl of Clarendon?
 9. Give a summary of Hallam's view of the constitution of the two houses of parliament under the Tudor and Stuart kings.
 10. Trace the growth of the present system of Party Government. Distinguish between the Cabinet and the Ministry.
 11. State briefly the chief events in the career of any *two* of the following:—Thomas Cromwell, Sir Walter Raleigh, Lord Falkland, Titus Oates.
 12. Write down what you know of the Icon Basilike, the Brehon Law, the Cameronians, Morton's "fork."
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MONDAY, December 1, 1884. 9—12.

MOTLEY.

1. DESCRIBE the condition of France at the time of the sovereignty of the Netherlands being offered to its king. Upon what grounds was this offer declined?

2. What is meant by the 'United Netherlands'? Describe shortly their constitution, and enumerate the several provinces which composed the Dutch republic.

3. What light does the History of the Netherlands throw on the character and policy of Queen Elizabeth?

4. Give some account of the siege and surrender of Deventer? or of the siege of Sluys.

5. Write a short note on not more than three celebrated Englishmen who were employed in the Netherlands in the war with Spain.

6. In what state of preparation was England at the time of the appearance of the Armada?

7. Under what circumstances did the Duke of Parma invade France? Mention the chief events of the invasion.

8. Give some account of the Arctic explorations of the Dutch in the early part of the 17th century.

9. What plans for the pacification of Europe were conceived by the French politicians in the reign of Henry IV.?

10. How do you account for the opposite views of Barneveld and Prince Maurice in the final negotiations for peace with Spain?

11. Discuss Parma's right to the designation of Alexander the Great.

12. Write notes on not more than *four* of the following: Admiral Jacobzoon—Spinola—The Cardinal Archduke—The Duke of Lerma—Lord Buckhurst—Zacharias Jansens of Middleberg—Martin Schenk—the fight on the Kowinstyn dyke.

SECOND SPECIAL EXAMINATION IN LAW FOR THE ORDINARY B.A. DEGREE.

SATURDAY, November 29, 1884. 9—12.

BLACKSTONE. I.

1. How far is it correct to say that the House of Lords is a hereditary chamber?

What are the laws and customs relating to the House of Lords in particular?

2. With whom does the decision of disputes as to the validity of Parliamentary Elections rest? Give the history of the question from the earliest times.

3. What difficult constitutional question was raised in the Revolution of 1688, and how was it settled?

Is there any evidence in our constitution for the view that the relation between King and People is one of contract?

4. Blackstone says "The sovereign moreover is not only incapable of *doing* wrong, but even of *thinking* wrong: he can never mean to do an improper thing: in him is no folly or weakness." What does he mean by this statement? and what is the practical result of the constitutional principle which it indicates?

5. When did the offices of Sheriff and Justice of the Peace originate? Describe briefly their duties.

6. Explain the nature of the following interests in real property, and give an example of each:—

- i. a contingent remainder.
- ii. an executory devise.
- iii. a base fee.
- iv. a tenancy in tail after possibility of issue extinct.

7. Describe briefly the nature of the Feudal System and its establishment in this country.

8. What are the different kinds of estates for life?

Give the principal incidents to estates for life with a short explanation of each.

9. Trace from the earliest times the power of disposing of real property by will.

10. *A* buys a ring from a jeweller for £15. *B* orders a boat to be built for him for £15. What must be done in each case in order that the contract should be binding?

11. Give the history of the law regarding the disposition of the personal property of a deceased intestate.

12. Explain briefly the following terms:

Wreck; flotsam and jetsam; deodand; prisage and butlerage; *congé d'élire*; *vivum vadium*; title by purchase; *valor maritagii*; Queen Anne's Bounty; corporation sole.

SATURDAY, November 29, 1884. 2—5.

BLACKSTONE. II

1. GIVE a summary of the present law relating to Arbitrations. When can the award of an Arbitrator be set aside?
 2. What was the original business of the Court of Exchequer? What was the nature of the writ *quo minus*?
 3. What remedy is given by English law for violation of personal liberty? How does it operate?
 4. What was the object of the old action of replevin?
 5. Point out the chief differences between the methods of trial and relief in a Court of Law and in a Court of Equity.
 6. Point out the object to be attained by punishments and give some considerations which assist us in determining their amount.
 7. Define the offences of *Piracy, Conspiracy, Rescue*.
 8. Define the offence of *Simple Larceny* and comment on the different parts of your definition.
 9. Explain the object and nature of a recognizance. Who is entitled to demand this security and how is it discharged?
 10. When are accused persons bailable? Have all courts the same discretionary powers of bailing?
 11. Explain the duties of the Grand and Petty Juries respectively. Distinguish between a Challenge to the Array and a Challenge to the Polls.
 12. Explain the meanings of the following terms: *Schyremote, Barretor, Peine forte et dure, Hue and Cry*.
-

MONDAY, December 1, 1884. 9—12.

MACKENZIE.

1. By what laws was the fusion of the two orders in Republican Rome effected? Give their provisions.

2. What effect had the age of a person on his legal capacity in Roman Law?

3. Under what heads may the rights of a Roman citizen as such be summed up? Explain each head briefly.

Give the history of the extension of the Roman citizenship.

4. Describe the different modes of manumission of slaves in use during the Republic and the Empire.

What was the legal and political position of a *libertinus*? Who were the *coloni*?

5. How far was a separate right of property recognized by Roman Law in the case of a son under the *Patria Potestas*?

6. What were the essentials for the acquisition of Ownership by *Occupatio*?

What rule was followed in the case of Game?

7. Explain the maxims:—

a. Nunquam nuda traditio transfert dominium.

β. Servitus in faciendo consistere non potest.

8. Give the general rules of Roman Law as to responsibility for fault, explaining the maxim '*Culpa lata æquiparatur dolo*.'

9. Give the different forms which the contract of pledge took in Roman Law. What was the *lex commissoria*?

10. Compare the rules of Roman and English law on the following points:—

a. The passing of the property in goods sold.

β. Implied warranty against defects in the quality of goods sold.

γ. The liability of an unremunerated agent (mandatarius).

11. Describe briefly the forms in use at different periods for making Roman testaments.

What were the chief limitations on the power of testators to dispose freely of their property?

12. Explain briefly the following terms:—

Ius Italicum; precarium; unciarium fœnus; beneficium cedendarum actionum; procurator in rem suam; legatum liberationis; lex Rhodia de iactu; venia ætatis; matrimonium non iustum; exceptio non numeratæ pecuniæ.

SECOND SPECIAL EXAMINATION IN MODERN LANGUAGES FOR ORDINARY B.A. DEGREE.

SATURDAY, November 29, 1884. 9—12.

CHAUCE: PROLOGUE AND KNIGHTES TALE.

1. STATE Chaucer's practice with regard to the pronunciation of final *-es* and final *-ed*. What are the different grammatical significations of final *-es*? Give the past participial endings of strong and weak verbs, and state whether the verbs *ride*, *hear*, *keep*, *tell*, *sell*, *seek* are, severally, weak or strong.

2. What were, respectively, the results of the influence of Old Danish and Norman-French upon the English language? What truth is there in the charge that Chaucer corrupted the language by the unnecessary introduction of French words? Make a list of all the words of French origin which occur in the quotations in question 4.

3. Give the past tense (first person) and the past participles of the modern English verbs: *take*, *strike*, *cleave*, *chide*, *set*, *lie*, *lay*, *shear*, *tread*, *beat*. Give the old *strong* past participles of *hold*, *melt*, *shape*, *wash*, *wax*, *shoot*, *seethe*; and the old *strong* past tenses of *chide*, *sleep*, *climb*, *carve*, *starve*.

4. Give the substance of the following lines in modern English, clearly explaining any difficult words, constructions, or allusions:

- (a) the yonge sonne
Hath in the Ram his halfe cours i-ronne.
- (b) Of fustian he wered a gepoun
Al bysmotered with his habergeoun.
- (c) Wel couthe he in eschaunge scheeldes selle.
- (d) An anlas and a gipser al of silk
Heng at his girdel, whit as morne milk.
A schirreve had he ben, and a countour;
Was nowher such a worthi vavasour.
- (e) It is ful fair to ben yclept *madame*,
And gon to vigilies al byfore,
And han a mantel rialliche i-bore.

5. Describe the Schipman and the Wyf of Bathe. What proportion of the Canterbury Tales did Chaucer complete? What connection with Chaucer's works have The Tale of Gamelyn and the Romaunt of the Rose?

6. Give the substance of the following lines in modern English, explaining all difficult words and constructions :

- (a) Wost thou nat wel the olde clerkes sawe,
That who schal yeve a lover eny lawe?
- (b) Nought oonly lyke the loveres maladye
Of Hereos, but rather lik manye
Engendred of humour malencolyk
Byforen in his selle fantastyk.
- (c) Al redy to derrayne hire by bataylle.
- (d) The cruel ire, as reed as eny gleede,
The pikepurs, and eek the pale drede.
- (e) The caroigne in the bussh, with throte y-corve;
A thousand slain, and not of qualme y-storve.
- (f) In culpons wel arrayed for to brenne.

7. Explain the following words:—bracer, wympel, tretys, fetys, pricasour, lazer, poraille, chevysaunce, scoleye, luce, slider, yollyng, athamaunte, greves, mountance, harneys, highte.

8. Give the etymologies of the following modern English words:—buckler, chantry, company, dishevelled, furnace, garner, harbour, nonce, nostril, poignant, poultry, ransom, tithe, verdict.

BURKE: PRESENT DISCONTENTS: TWO SPEECHES ON AMERICA.

9. DISCUSS the charge of inconsistency which has been brought against Burke, and the nature of the Whiggism of the last century. What were Burke's views as to Reform? Notice some of the merits to be found in his works.

10. What was the "Double Cabinet," and what were the circumstances that facilitated its introduction? How does Burke prove it to be at variance with the spirit of the Constitution?

11. What, according to Burke, were the effects of the Double Cabinet system on (1) the Executive Government: (2) the Temper of the People: (3) the Interests of the Sovereign?

12. How does Burke argue that a repeal of the Tea Duty will not lead to demands for further concessions? What does Burke mean by 'The General Epistle to the Americans'? Give some of his comments upon it. Contrast the state of America before and after the repeal of the Stamp Act.

13. Explain the allusions in the following: (a) Many innocent gentlemen, who had been talking prose all their lives without knowing anything of the matter: (b) the Cabal have established a sort of *Rota* in the court: (c) Like Janissaries, they derive a kind of freedom from the very condition of their servitude: (d) *Spoliatis arma supersunt*.

SHAKESPEARE: JULIUS CÆSAR.

2. Explain the following passages, stating to what they refer, and who is the speaker in each case.

3. Explain the following phrases, and the allusions in them: To hear the replication of your sounds Made in her concave shores—Beware the ides of March—Like a Colossus—Scorning the base degrees By which he did ascend—The Genius and the mortal instruments Are then in council—Sign'd in thy spoil, and crimson'd in thy lethe—You know that I held Epicurus strong, And his opinion.

- (a) There's two or three of us have seen strange sights.
(b) Nor heaven nor earth have been at peace tonight.
(c) For Brutus' sake, I am beholding to you.

- Give the etymology of the words *climate*, *porch*, *mischievous*, *carriage*, *mettle*, *exorcist*.

6. GIVE some account of the writings of Thomas Sackville, Sir Philip Sidney, and Edmund Spenser.

- Discuss the general tone and tendency of his writings, and account for their occasional want of success. Mention some of the plays of Beaumont and Fletcher, and state how they were received by play-goers.

8. When and how did the plays of Shakespeare first appear in print, either separately or collectively? By what methods can the order of their production be to some extent ascertained?

Give the names of any three of his tragedies, any three of his comedies, and of all his plays relating to English History.

9. Discuss the value and influence of the writings of Francis Bacon.

10. Discuss the character of Brutus as exhibited in Shakespeare.

11. Give a brief but clear sketch of the plot of one of Shakespeare's tragedies.

12. Write a short essay on the following sentence from Bacon:—"Outward accidents conduce much to fortune; but chiefly, the mould of a man's fortune is in his own hand. *Faber quisque fortunæ suæ.*"

MONDAY, December 1, 1884. 9—12.

FRENCH COMPOSITION, TRANSLATION AND GRAMMAR.

1. TRANSLATE INTO ENGLISH:

(a) Ce qui déparait Bonaparte, lorsqu'il se trouvait ainsi dans une évidence de ce genre, c'était le vice habituel de sa prononciation. Ordinairement, il faisait rédiger le discours qu'il voulait prononcer; c'était, je crois, M. Maret le plus souvent, quelquefois M. Vignaud, ou même M. de Fontanes qui s'en chargeaient. Après, il essayait de l'apprendre par cœur, mais il y réussissait peu, la moindre contrainte lui étant insupportable. Il se décidait toujours en définitive à lire son discours, qu'on avait soin de lui copier en très gros caractères, car il avait très peu l'habitude de lire une écriture, et n'aurait rien compris à la sienne. Ensuite, il se faisait apprendre à prononcer les mots; mais il oubliait, en parlant, la leçon qu'il avait reçue, et, d'un son de voix un peu sourd, d'une bouche à peine ouverte, il lisait ses paroles avec un accent encore plus étrange qu'étranger, qui avait quelque chose de désagréable, et même de vulgaire. J'ai souvent entendu dire à un grand nombre de personnes qu'elles ne pouvaient se défendre d'une impression pénible en l'écoutant parler en public. Ce témoignage irrécusable, donné par son accent, de son étrangeté à l'égard de la nation, frappait l'oreille et la pensée désagréablement. J'ai moi-même éprouvé quelquefois cette sensation involontaire.

MADAME DE RÉMUSAT, *Mémoires*, Chap. xxv.

(b) —Les hommes!—c'est-à-dire, une foule, une mer,
Un grand bruit; pleurs et cris, parfois un rire amer;
Plainte qui, réveillant la terre qui s'effare,
A travers tant d'échos, nous arrive fanfare.

Les hommes!—des cités, des tours, un vaste essaim,—
 De hauts clochers d'église à sonner le tocsin!—
 Base de nations portant sur leurs épaules
 La pyramide énorme appuyée aux deux pôles,
 Flots vivants, qui toujours l'étreignant de leurs plis,
 La balacent, branlante, à leur vaste roulis,
 Font tout changer de place et, sur ses hautes zones,
 Comme des escabeaux font chanceler les trônes,
 Si bien que tous les rois, cessant leurs vains débats,
 Lèvent les yeux au ciel.... —Rois! regardez en bas!
 —Ah! le peuple!—Océan!—Onde sans cesse émue,
 Où l'on ne jette rien sans que tout ne remue!
 Vague qui broie un trône et qui berce un tombeau!
 Miroir où rarement un roi se voit en beau!

VICTOR HUGO, *Hernani*, Act IV. Scene 2.

2. Translate into FRENCH:

We have had a second earthquake, much more violent than the first; and you must not be surprised if by next post you hear of a burning mountain sprung up in Smithfield. In the night between Wednesday and Thursday last, (exactly a month since the first shock,) the earth had a shivering fit between one and two; but so slight that, if no more had followed, I don't believe it would have been noticed. I had been awake, and had scarce dozed again—on a sudden I felt my bolster lift up my head; I thought somebody was getting from under my bed, but soon found it was a strong earthquake, that lasted near half a minute, with a violent vibration and great roaring. I rang my bell; my servant came in, frightened out of his senses: in an instant we heard all the windows in the neighbourhood flung up. I got up and found people running into the streets, but saw no mischief done: there has been some; two old houses flung down, several chimneys, and much china-ware. The bells rung in several houses. Admiral Knowles, who has lived long in Jamaica, and felt seven there, says this was more violent than any of them: Francesco prefers it to the dreadful one at Leghorn. The wise say, that if we have not rain soon, we shall certainly have more. Several people are going out of town, for it has nowhere reached above ten miles from London: they say, they are not frightened, but that it is such fine weather, "Lord! one can't help going into the country!"

SIR HORACE WALPOLE, *Letter to Sir Horace Mann*, 11 March, 1750.

3. Into how many classes have French pronouns been divided? Give examples of each.

4. Give the first person singular of the imperfect indicative, perfect indicative, future indicative, conditional, present subjunctive, and the present and past participle, of the following verbs: *battre*, *conclure*, *croire*, *fuir*, *mouvoir*, *rompre*, *mettre*.

5. What rule can be given for the conjugation of neuter verbs with *avoir* instead of with *être*? Construct sentences to illustrate your answer.

6. When are the negatives *ne* and *pas* used alone, and when are they used together?

MONDAY, December 1, 1884. 2—5.

MOLIÈRE: LE MISANTHROPE. VOLTAIRE: LE SIÈCLE DE LOUIS XIV.

1. TRANSLATE the following passages:

- (a) CLITANDRE. Parbleu! je viens du Louvre, où Cléonte, au levé,
Madame, a bien paru ridicule achevé.
N'a-t-il point quelque ami qui pût, sur ses manières,
D'un charitable avis lui prêter les lumières?
- CÉLIMÈNE. Dans le monde, à vrai dire, il se barbouille fort;
Partout il porte un air qui saute aux yeux d'abord;
Et, lorsqu'on le revoit après un peu d'absence,
On le retrouve encor plus plein d'extravagance.
- ACASTE. Parbleu, s'il faut parler des gens extravagants,
Je viens d'en essayer un des plus fatigants;
Damon le raisonneur, qui m'a, ne vous déplaît,
Une heure, au grand soleil, tenu hors de ma chaise.
- CÉLIMÈNE. C'est un parleur étrange, et qui trouve toujours
L'art de ne vous rien dire avec de grands discours:
Dans les propos qu'il tient on ne voit jamais goutte,
Et ce n'est que du bruit que tout ce qu'on écoute.
- ÉLIANTE, à Philinte. Ce début n'est pas mal; et, contre le prochain,
La conversation prend un assez bon train.
- (b) ALCESTE. Allons, c'est trop souffrir les chagrins qu'on nous forge:
Tirons-nous de ce bois et de ce coupe-gorge.
Puisque entre humains ainsi vous vivez en vrais loups,
Traîtres, vous ne m'aurez de ma vie avec vous.
- PHILINTE. Je trouve un peu bien prompt le dessein où vous êtes;
Et tout le mal n'est pas si grand que vous le faites.
Ce que votre partie ose vous imputer
N'a point eu le crédit de vous faire arrêter;
On voit son faux rapport lui-même se détruire,
Et c'est une action qui pourroit bien lui nuire.
- ALCESTE. Lui? de semblables tours il ne craint point l'éclat:
Il a permission d'être franc scélérat;
Et, loin qu'à son crédit nuise cette aventure,
On l'en verra demain en meilleure posture.
- PHILINTE. Enfin il est constant qu'on n'a point trop donné
Au bruit que contre vous sa malice a tourné;
De ce côté déjà vous n'avez rien à craindre:
Et pour votre procès, dont vous pouvez vous plaindre,
Il vous est en justice aisé d'y revenir,
Et contre cet arrêt...
- ALCESTE. Non, je veux m'y tenir.

(c) Il alla assiéger Dôle en personne. Cette place était réputée forte; elle avait pour commandant le comte de Montrevel, homme d'un grand courage, fidèle par grandeur d'âme aux Espagnols, qu'il haïssait, et au parlement, qu'il méprisait. Il n'avait pour garnison que quatre cents soldats et les citoyens, et il osa se défendre. La tranchée ne fut point poussée dans les formes. A peine l'eut-on ouverte, qu'une foule de jeunes volontaires, qui suivaient le roi, courut attaquer la contrescarpe, et s'y logea: le prince de Condé, à qui l'âge et l'expérience avaient donné un courage tranquille, les fit soutenir à propos, et partagea leur péril pour les en tirer. Ce prince était partout avec son fils, et venait ensuite rendre compte de tout au roi, comme un officier qui aurait eu sa fortune à faire. Le roi, dans son quartier, montrait plutôt la dignité d'un monarque dans sa cour, qu'une ardeur impétueuse qui n'était pas nécessaire. Tout le cérémonial de Saint-Germain était observé. Il avait son petit coucher, ses grandes, ses petites entrées, une salle des audiences dans sa tente. Il ne tempérerait le faste du trône qu'en faisant manger à sa table ses officiers généraux et ses aides de camp.

2. Translate the following passages explaining carefully the construction or the allusion contained in the words printed in italics:

- (a) Je n'y puis plus tenir, j'enrage: et mon dessein
Est de *rompre en visière* à tout le genre humain.
- (b) Et n'allez point quitter, *de quoi que l'on vous somme*,
Le nom que dans la cour vous avez d'honnête homme.
- (c) Et je vous promettrai mille fois le contraire
Que je ne serois pas en pouvoir de le faire.
- (d) Faut-il de vos chagrins sans cesse à moi vous prendre?
Et *puis-je mais* des soins qu'on ne va pas vous rendre?
- (e) Il aime quelquefois sans qu'il le sache bien,
Et croit aimer aussi, parfois, *qu'il n'en est rien*.
- (f) Je suis sotte et *veux mal* à ma simplicité
De conserver eucor pour vous quelque bonté.
- (g) Il n'y avait en Europe que lui et le Suédois Torstenson *qui eussent eu* à vingt ans ce génie *qui peut se passer de l'expérience*.
- (h) On admira la manière *dont il rétablit le désordre*.
- (i) Pour accabler ainsi l'empereur, il *n'en coûta guère* à la France qu'environ un million par an donné aux Suédois.

3. Give a sketch of the plot of *Le Misanthrope*, and mention any other plays written on a similar subject.

4. Give the dates of the birth and death of Molière, and mention the names of the principal dramatists who were his contemporaries.

5. When did Voltaire live? What reforms are associated with his name?

6. What is meant by the term *ancien régime*? What was the constitution of the Parliament of Paris during the reign of Louis XIV?

MONDAY, *December 1*, 1884. 9—12.

GERMAN COMPOSITION, TRANSLATION AND GRAMMAR.

I. TRANSLATE into GERMAN:

If you consider the universe as one body, you shall find society and conversation to supply the office of the blood and spirits; and it is gratitude that makes them circulate: look over the whole creation, and you shall see that the band or cement that holds together all the parts of this great and glorious fabric is gratitude, or something like it: you may observe it in all the elements; for does not the air feed the flame? and does not the flame at the same time warm and enlighten the air? Is not the sea always sending forth as well as taking in? And does not the earth quit scores with all the elements, in the noble fruits and productions that issue from it? And in all the light and influence that the heavens bestow upon this lower world, though the lower world cannot equal their benefaction, yet, with a kind of grateful return it reflects those rays that it cannot recompense, so that there is some return however, though there can be no requital. He who has a soul wholly void of gratitude should do well to set his soul to learn of his body; for all the parts of that minister to one another. The hands and all the other limbs labour to bring in food and provision to the stomach, and the stomach returns what it has received from them in strength and nutriment, diffused into all the parts and members of the body. It would be endless to pursue the like allusions: in short, gratitude is the great spring that sets all the wheels of nature a-going; and the whole universe is supported by giving and returning, by commerce and commutation.

SOUTH.

II. Translate into ENGLISH:

1. Man lasse mich als Ausleger und Rhapsodisten fortfahren: denn ich bin Shakespeare näher als dem Griechen. Wenn bey diesem das Eine einer Handlung herrscht: so arbeitet Jener auf das Ganze eines Eräugnisses, einer Begebenheit. Wenn bey Jenem Ein Ton der Charaktere herrschet, so bey diesem alle Charaktere, Stände und Lebensarten, so viel nur fähig und nöthig sind, den Hauptklang seines Concerts zu bilden. Wenn in Jenem Eine singende feine Sprache, wie in einem höhern Aether töneth, so spricht dieser die Sprache aller Alter, Menschen und Menschenarten, ist Dollmetscher der Natur in all' ihren Zungen—und auf so verschiedenen Wegen beyde Vertraute Einer Gottheit!—Und wenn Jener Griechen vorstellt und lehrt und rührt und bildet, so lehrt, rührt und bildet Shakespeare nordische Menschen! Mir ist, wenn ich ihn lese, Theater, Akteur, Coulisse verschwunden! Lauter einzelne im Sturm der Zeiten wehende Blätter aus dem Buch der Begebenheiten, der Vorsehung der Welt!—einzelne Gepräge der Völker, Stände, Seelen! die alle die verschiedenartigsten und abgetrenntest handelnden Maschinen, alle—was wir in der Hand des Weltschöpfers sind—unwissende, blinde Werkzeuge zum Ganzen Eines theatralischen Bildes, Einer Grösse habenden Begebenheit, die nur der Dichter überschauet. Wer kann sich einen grösseren Dichter der nordischen Menschheit und in dem Zeitalter! denken!

HERDER.

2. Strafbar erschein' ich und ich kann die Schuld
 Wie ich's versuchen mag, nicht von mir wälzen;
 Denn mich verklagt der Doppelsinn des Lebens,
 Und—selbst der frommen Quelle reine That
 Wird der Verdacht schlimmdeutend mir vergiften.
 War ich, wofür ich gelte, der Verräther
 Ich hätte mir den guten Schein gespart
 Die Hülle hätt' ich dicht um mich gezogen,
 Dem Unmuth Stimme nie geliehen. Der Unschuld
 Des unverführten Willens mir bewusst
 Gab ich der Laune Raum der Leidenschaft—
 Kühn war das Wort, weil es die That nicht war.
 Jetzt werden sie, was planlos ist geschehn,
 Weitsehend, planvoll mir zusammenknüpfen
 Und was der Zorn und was der frohe Muth
 Mich sprechen liess im Ueberfluss des Herzens
 Zu künstlichem Gewebe mir vereinen
 Und eine Klage furchtbar draus bereiten
 Dagegen ich verstummen muss. So hab' ich
 Mit eignem Netz verderblich mich umstrickt
 Und nur Gewaltthat kann es reissend lösen.

SCHILLER, *Wallenstein's Tod.*

III. i. What order is observed in a sentence of the *transposed* and *inverted* arrangements respectively? Give instances in illustration.

ii. How is the distinction between *sein* and *werden* utilised in German grammar?

iii. Turn the following sentences:

1. into ENGLISH:

- (a) Es wird gekegelt.
- (b) Regierte Recht so läget Ihr vor mir im Staube.

2. into GERMAN:

- (a) You will never find another servant such as he is.
- (b) I felt as though I had the strength of ten men.
- (c) They believed that it was true.
- (d) He wished he had remained at home.

MONDAY, December 1, 1884. 2—5.

GOETHE. HERMANN UND DOROTHEA.

I. TRANSLATE into ENGLISH, adding marginal notes where necessary :

1. Dieser sprach "Ich tadle nicht gern, was immer dem Menschen
Für unschädliche Triebe die gute Mutter Natur gab;
Denn was Verstand und Vernunft nicht immer vermögen, vermag oft
Solch ein glücklicher Hang, der unwiderstehlich uns leitet.
Lockte die Neugier nicht den Menschen mit heftigen Reizen,
Sagt, erfähr' er wohl je, wie schön sich die weltlichen Dinge
Gegen einander verhalten? Denn erst verlangt er das Neue,
Suchet das Nützliche dann mit unermüdetem Fleisse,
Endlich begehrt er das Gute, das ihn erhebet und werth macht."
2. Vieles hab' ich fürwahr von meinen Gespielen geduldet,
Wenn sie mit Tücke mir oft den guten Willen vergalten;
Oftmals hab' ich an ihnen nicht Wurf noch Streiche gerochen:
Aber spotteten sie mir den Vater aus, wenn er Sonntags
Aus der Kirche kam mit würdig bedächtigem Schritte,
Lachten sie über das Band der Mütze, die Blumen des Schlafrocks,
Den er so stattlich trug und der erst heute verschenkt ward:
Fürchterlich ballte sich gleich die Faust mir; mit grimmigem Wüthen
Fiel ich sie an und schlug und traf mit blindem Beginnen,
Ohne zu sehen wohin; sie heulten mit blutigen Nasen,
Und entrissen sich kaum den wüthenden Tritten und Schlägen.
Und so wuchs ich heran, um viel vom Vater zu dulden,
Der statt Anderer mich gar oft mit Worten herumnahm,
Wenn bei Rath ihm Verdruss in der letzten Sitzung erregt ward:
Und ich büsste den Streit und die Ränke seiner Collegen.
3. Aber der Himmel trübte sich bald. Um den Vortheil der Herrschaft
Stritt ein verderbtes Geschlecht, unwürdig, das Gute zu schaffen;
Sie ermordeten sich und unterdrückten die neuen
Nachbarn und Brüder, und sandten die eigennützige Menge.
Und es prassten bei uns die Öbern und raubten im Grossen,
Und es raubten und prassten bis zu dem Kleinsten die Kleinen;
Jeder schien nur besorgt, es bleibe was übrig für morgen.
Allzugross war die Noth, und täglich wuchs die Bedrückung;
Niemand vernahm das Geschrei, sie waren die Herren des Tages.

4. Siehst Du des Tischlers da drüben für heute geschlossene Werkstatt?
Morgen eröffnet er sie; da rühret sich Hobel und Säge,
Und so geht es von frühe bis Abend die fleissigen Stunden.
Aber bedenke Dir dies: der Morgen wird künftig erscheinen,
Da der Meister sich regt mit allen seinen Gesellen,
Dir den Sarg zu bereiten und schnell und geschickt zu vollenden;
Und sie tragen das bretterne Haus geschäftig herüber,
Das den Geduld'gen zuletzt und den Ungeduldigen aufnimmt
Und gar bald ein drückendes Dach zu tragen bestimmt ist.
Alles sah ich sogleich im Geiste wirklich geschehen,
Sah die Bretter gefügt und die schwarze Farbe bereitet,
Sass geduldig nunmehr und harrete ruhig der Kutsche.
Rennen Andere nun in zweifelhafter Erwartung
Ungeberdig herum, da muss ich des Sarges gedenken.
5. Write a short account of the historical episode on which Hermann und Dorothea is founded. Give instances of Homeric phrases employed by Goethe in this poem.

GUTZKOW. ZOPF UND SCHWERT.

II. Translate, adding marginal explanations:

1. KÖNIG. Oho, schmeicheln Sie dem alten Kammerhusaren nicht! Mit England sind das schon alte Geschichten und von meiner Frau seit Jahren eingefädelt. ERBPRINZ. Von der Königin? Ich glaube, dass Ihre Majestät die Königin— bei weitem mehr—für—für Oesterreich sein wird. KÖNIG. Für Oesterreich? (*Bei Seite.*) Das konnt' ich mir denken, dass die schon wieder ihren eigenen Willen haben muss! (*Laut und entschieden.*) Nein, heut hab' ich einen Kurier von unserm Gesandten bekommen, der mich versichert, dass es England mit dieser im stillen abgekarteten Heirath Ernst ist. Der Prinz von Wales hat sich in England eingeschifft und man vermuthet, dass er bereits an der hannöverschen Küste gelandet ist. Einstweilen ist im strengsten Incognito ein Bevollmächtigter von London abgegangen, der alle Punkte dieser Heirath mit mir verhandeln soll. Dieser Gesandte kann jede Stunde in Berlin eintreffen. Sie würden mich also sehr verbinden— ERBPRINZ (*in Verzweiflung*). Soll es denn ein Schäferspiel sein? KÖNIG. Ja! Und der Kronprinz kann dabei die Flöte blasen, die er doch nun 'mal hinter meinem Rücken gelernt hat.

2. KÖNIG. Und Eversmann, den nennt er immer la Rapinière. Das heisst soviel als "der alte Nimmersatt!" EVERSMAUN. Der Racker! Und solche Bücher kommen ins Land herein und werden noch ordentlich vom Kronprinzen gestempelt? KÖNIG. Ist Wilhelmine betheilt — es wäre empörend. Der Generalfiscal soll alles streng untersuchen. (*Im äussersten Zorn.*) Ist denn für mich kein ruhiger Augenblick möglich! EVERSMAUN. Majestät, die gottlosen Bücher sollen in die Scharfrichterei, damit sie öffentlich verbrannt werden? KÖNIG. Nein, nicht als Fidibus in unserm Colleg möcht' ich sie haben. Nicht einmal zum Verbrennen für die Festlichkeiten, die wir — Meine Herren, schütteln Sie's ab wie ich. Heut' Abend, wenn unser Pfeifchen dampft und glüht, bei einem Trunke deutschen Gerstensaftes, machen wir uns dafür ebenso über Versailles und das ganze französische Ministerium lustig.

3. GRUMBKOW (*zeigt auf Hotham, der sich verbeugt*). Herr von Hotham wünscht Ew. Majestät persönlich aufzuwarten. KÖNIG. Sagen Sie ihm, Preussen nähme sich zusammen. Die deutschen Fabrikanten müssten Luft haben, um den Engländern das nachzuhaspeln und nachzuweben, was die uns schon voraus sind. GRUMBKOW. Herr von Hotham ist im Begriff, sich von Ew. Majestät selbst die Entlassung zu erbitten. KÖNIG (*nicht achtend*). Die Angelegenheit ist abgethan. Nur durch meine Minister! Ich ziehe die üblichen Formen vor. (*Setzt sich*.) GRUMBKOW (*in der Mitte*). Sie sehen, Herr von Hotham — HOTHAM (*zu Grumbkow*). Sagen Sie Sr. Majestät, Herr General, dass ich unendlich bedaure, den Zweck meiner Reise verfehlt zu haben. Sagen Sie ihm — GRUMBKOW. Se. Majestät sind zugegen! HOTHAM. Sagen Sie ihm, dass die Industrie eines Landes jahrhundertjährige Vorbereitungen bedarf, um den Preiscourant so niedrig zu stellen, wie ihn der englische Kaufmann stellt. Sagen Sie ihm — GRUMBKOW. Wollen Sie nicht Sr. Majestät persönlich —? HOTHAM. Ich ziehe die üblichen Formen vor. KÖNIG (*sitzend und sich mit Notizen in seiner Brieftasche beschäftigend*). Ganz schön! Und dann, Grumbkow, melden Sie ihm auch von wegen dem Prinzen von Wales, ich wollt' erst noch in Berlin ein paar neue Thore bauen lassen, jetzt müsst' er schon, um sich aus dem Staube zu machen, mit den alten vorlieb nehmen.

4. KÖNIGIN. Der Prinz ist nicht in Berlin? HOTHAM. Während einige der glaubwürdigsten Zeugen versichern, der Prinz wäre wirklich hier gewesen, wollen andere behaupten, er wäre nach England in dem Augenblick zurückgekehrt, wo er erfahren müsste, dass sich das Interesse seines Patriotismus, das Interesse der Baumwolle, mit den Empfindungen seines Herzens nicht vereinigen liesse. KÖNIG. Was soll der Erbprinz von Baireuth? HOTHAM. Er suchte, wie wir, den Prinzen von Wales, mit dem er in Begriff ist, sich auf Tod und Leben zu schlagen. ALLE. Ha! KÖNIG. Zu schlagen? Warum denn er? HOTHAM. Weil der arme Prinz eines kleinen Landes dem Prinzen eines Weltstaates seine Flotten, seine Armeen, seine Schätze gönnt, einen Schatz aber nur mit seinem Blut ihm abtreten wird, die Hand der Prinzessin Wilhelmine, die er liebt!

5. What were the relations of the English, Prussian and Austrian courts, which form the basis of this comedy? In what points does Gutzkow deviate from the facts of history? What were the merits and peculiarities of Frederick William as far as may be gathered from this play?

III. (i) What do you know of the writings of Johann Heinrich Voss, Musäus, Stilling?

(ii) Give a short account of *Oberon*, *der Messias*, *Nathan der Weise*, and their authors.

(iii) Mention some of Uhland's earlier poems.

SECOND SPECIAL EXAMINATION IN MECHANISM AND APPLIED SCIENCE FOR THE ORDINARY B.A. DEGREE.

SATURDAY, *November* 29, 1884. 9 to 12.

MECHANICS.

1. THE safe load on a chain is given by the formula

$$W = \frac{D^3}{9}.$$

W = safe load in tons: D is the number of eighths of an inch in the diameter of the iron out of which the chain is made.

Find the safe strength of chain made of one inch and of $\frac{3}{8}$ inch iron.

These chains weigh 28 lbs. and 8 lbs. per yard each. What is the greatest safe length that each of these chains can hang down, vertically, and with no weight fastened to them at the bottom?

2. Make a sketch of a pump which discharges an equal quantity of water in the up stroke and in the down stroke.

3. Find the horse-power of an engine which is taking a train of 120 tons down an incline of 1 in 224 at 50 miles an hour; resistance on the level at this speed 35 lb. a ton.

4. A train runs down an incline of one in 88 for a mile from rest. How quick will it be moving at the end; neglecting friction and the resistance of the air?

5. Describe any plan for shewing what is the level of the water in a boiler.

What is meant by a fusible safety plug and how does it act?

6. How much work is stored up in a fly-wheel weighing 20 tons and rotating 30 turns per minute? assume that all the weight is at a distance of 14 feet from the centre, and give your answer in foot pounds.

7. A man weighing 150 lbs. walks up a hill of 1 in 6 at the rate of 4 miles an hour; what fraction of a horse-power is he doing?

8. Iron can be safely loaded to 5 tons per square inch in tension. What pressure per square inch can safely be used in a cylindrical boiler 10 ft. in diameter $\frac{1}{2}$ inch thick?

9. An object is placed in one scale-pan of an ordinary balance and it is balanced by 20 lbs. The object is then put into the scale-pan in which the weight was and now it takes 21 lbs. to balance it. When both scale-pans are empty the scales balance. What is the matter with the balance, and what is the true weight of the object?

10. Describe a hydraulic press.

The ram of a press is 20 inches in diameter, and it is required to lift 100 tons, what size should you make the plunger of the pump and what amount of leverage should you give the handle so that the pressure on the man's hand working it would be 10 lbs. neglecting friction?

11. A man weighing 150 lbs. rides a bicycle with the front wheel 56 inches in diameter; the weight of the bicycle is 40 lbs. and each treadle is fixed at 4 inches from the centre of the wheel. Find how steep a hill he can just ride up assuming that all his weight acts on each treadle throughout the whole of each down stroke.

12. The following is the formula for centrifugal force $F = .00034 WRN^2$.

F = centrifugal force measured in lbs.

W = weight of body in lbs.

R = radius.

N = number of revolutions per minute.

Find out whether R is measured in feet or inches.

13. A diving-bell is let down into water so that the level of the water in the bell is 33 ft. below the surface of the water. If the bell is cylindrical and no air is pumped into it whilst it goes down, how high will the water have risen in the bell itself?

14. Power is sometimes transmitted to a distance by compressed air, and sometimes by water under great pressure. Give the advantages and disadvantages of these two systems, and give examples in which they are used.

Can you give descriptions of any other systems of transmission of power?

SATURDAY, November 29, 1884. 2 to 5.

HEAT.

1. EXPLAIN what is meant by the Mechanical Theory of Heat, and the Mechanical Equivalent of Heat, and describe the experiments by which the latter was determined.

2. Mention the principal sources of Heat in nature; and describe the different effect of Heat on substances.

3. Describe the method of filling and graduating a mercurial thermometer, mentioning the scales of graduation usually employed.

Describe the maximum and minimum thermometers.

4. Distinguish between the linear, superficial and cubical expansion of homogeneous substances and explain how the respective coefficients are related together.

Describe the action of a thermometer filled with water instead of mercury between 8°C . and 0°C .

5. Shew how to determine experimentally the coefficient of cubical expansion of mercury and of linear expansion of iron.

Determine the linear expansion of iron supposing the driving wheel of an engine to make 20,000 revolutions between two stations, when the temperature is 92°F ., and 20,006 when the temperature is 32°F .

6. State the gaseous laws of Boyle and Charles, and hence shew that the pressure of a given quantity of gas is inversely proportional to the volume and directly proportional to the absolute temperature; explaining what is meant by absolute temperature and the absolute zero.

Describe the air-thermometer.

7. Draw and describe the locomotive boiler and the marine boiler.

State the number of pounds of water evaporated per pound of coal burnt in a well designed marine boiler.

What is the quantity of coal required for a voyage of 10 days in a steamship of 5000 horse-power?

8. What is the advantage of the compound principle in steam engines?

Describe (i) a marine engine with three cylinders, one high pressure and two low pressure; (ii) Webb's compound locomotive engine.

9. Explain how to take the indicator diagrams of a steam-engine, and thence how to calculate the horse-power.

Draw a figure of a diagram from a well designed engine, explaining how the shape of the diagram will indicate faults in the engine.

10. Give your reasons for and against the probability of the steam engine being supplanted by the hot-air engine, the Otto gas engine, or the electrical engine.

MONDAY, *December 1, 1884.* 9 to 12.

MECHANISM.

1. **EXPLAIN** the quick return for a shaping machine. What is the advantage of this arrangement?
2. Explain with drawings how the head stock of a lathe with back gearing is arranged. Explain one or both of the ordinary methods of throwing this gearing out of gear, when it is required to run the lathe in the ordinary manner.
3. Describe the fusee in a watch. What is its object?
4. Explain the mechanism of switches for turning a train from one line of railway to another. Describe an arrangement for preventing the points being moved whilst a train is passing over them.
5. Describe any method of drawing an ellipse.
6. Describe Watt's governor for a steam engine, and the marine governor.
7. How would you find out whether a carpenter's square gives you a right angle accurately?
8. In some windmills there is an arrangement by which the sails are always made to point towards the wind; explain how this is done.
What is the most efficient speed of the wheel for a given velocity of the wind?
9. The scape wheel of a clock has 30 teeth: on the same arbour there is a pinion of 12 teeth which gears into a wheel of 60 teeth, on the same arbour as this wheel there is a pinion of 10 teeth which gears into another wheel of 60 teeth; on the same arbour as this wheel the minute hand is fixed. How quick does the scape wheel go round and how long is the pendulum? A seconds pendulum is 39 inches long.
10. Describe any method for preventing a watch or clock from being over wound.
Describe the arrangement for winding a keyless watch.
11. Explain how to draw the shape of the teeth of a wheel which is to gear into a pinion in which each tooth consists of a circular pin.
In this case should the pinion drive the wheel or the wheel drive the pinion?
12. Describe the form of ratchet and ratchet-wheel which can be made to turn the wheel in either direction at pleasure. Explain for what purpose this is used in some shaping machines.

13. Explain any form of arrangement for compensating for the expansion of a pendulum by increase of temperature.

14. Describe the Weston Differential Pulley block.

15. Explain the arrangement used in mangles for converting circular into reciprocal motion.

Can a quick return be arranged on this principle?

16. Describe the mechanism of any one of the following objects:

Moderator Lamp. Reading Lamp. Bottle Jack. Smoke Jack. Loom. Sewing machine. Ordinary lock. Bramah Lock. Spinning wheel. Lawn mower. Reaping machine.

MONDAY, *December 1, 1884.* 2 to 5.

DRAWING.

1. MAKE a scale in which $\frac{1}{8}$ of an inch equals one inch; divide one inch on this scale into eight equal parts, one into ten equal parts, and one into twelve equal parts. Or: make a scale of yards for a map in which one mile equals six inches.

2. Read Art. 92 in "Mill Gearing" by T. Box and design a flange coupling for a $1\frac{1}{2}$ inch shaft.

3. Design a water-tap like the one given but with a half inch water way through it, and with flanges two inches in diameter and $\frac{1}{4}$ inch thick at each end.

TUESDAY, *December 2, 1884.* 9 to 12.

PRACTICAL WORK.

1. Half lap and screw two pieces of pine each 12 in. by 3 in. by $1\frac{1}{4}$ in. together so as to form a piece like the letter L (like the example given).

SECOND SPECIAL EXAMINATION IN NATURAL SCIENCES FOR THE ORDINARY B.A. DEGREE.

SATURDAY, *November 29*, 1884. 9—12.

BOTANY. I.

1. WHAT is meant by a *thallus*? Describe the chief forms of thallus seen in Algæ, with examples.

2. Of what parts of a plant may tendrils be modifications? Give examples, and give an account of the functions of tendrils.

3. Describe the physical characters of Starch, and give an account of its mode of development, the parts of plants in which it is found, and the purposes it subserves.

4. Describe any ovule, and give a short account of the changes which take place in it during its development into a seed.

5. What are the conditions necessary for the germination of a seed?

Describe the germination and early growth of the seed of some common dicotyledonous plant.

6. Compare and contrast the following groups of Natural Orders:—Ranunculaceæ and Rosaceæ; Campanulaceæ, Compositæ, Dipsacæ and Valerianaceæ; Solanaceæ, Scrophulariaceæ, Boraginaceæ and Labiatæ; Cyperaceæ and Gramineæ.

SATURDAY, *November 29*, 1884. 9—12.

CHEMISTRY. I.

1. EXPLAIN carefully what is meant by calling Heat "a mode of motion."

2. Temperature may be defined as "The quality of a body in virtue of which it seems hot or cold;" and qualities are not capable of being *directly* measured: explain then the principle on which a thermometer is ordinarily used to measure temperatures.

Is it strictly correct to say that the temperature of one body is twice as great as that of another?

3. State the laws which connect the alteration in volume of a gas with changes of its temperature and pressure.

What law of the molecular constitution of gases has been deduced from these laws? How does this law enable chemists to determine the weights of molecules?

4. Explain clearly the *principles* (not the mere methods) on which the measurement of quantities of heat is based.

20 grams of a substance, at a temperature of 10°C ., whose specific heat is $\cdot 09515$ are mixed with an unknown weight of another substance, at a temperature of 20°C . whose specific heat is $\cdot 615$. The resulting temperature is 18°C . What was the weight of the second substance used in the experiment?

5. What do you understand by the term Energy?

Explain with special reference to heat the expressions Conservation and Dissipation of Energy.

6. Describe several processes by which the temperature of a body can be considerably reduced, and explain clearly to what the reduction of temperature is in each case due.

7. Describe as many experiments as you can which shew that heat and light are identical in nature.

Would there be anything absurd in supposing that some animals might see a kettle, if filled with boiling water, in a room perfectly dark to human beings; or that a photograph of such a kettle might be taken under the same circumstances?

SATURDAY, November 29, 1884. 9—12.

GEOLOGY. I.

1. DESCRIBE the various processes by which (1) granite, (2) limestone undergoes denudation.

2. Give proofs that slow elevation and depression of land are taking place in different parts of the world. Mention the localities where evidence has been obtained of such movements in historic times.

3. Describe a volcanic cone such as that of Vesuvius, and give an account of the ordinary products of an eruption.

Indicate on a rough map of the world the distribution of volcanoes.

4. What is the nature of the "red clay" found in the deep sea? State in what parts of the sea it occurs and its probable origin.

5. Give the characters (mineralogical and other) of the following rocks, and mention the conditions under which they occur in the crust of the earth:—

Anthracite, Carrara Marble, Chert, Felsite, Gneiss, Granite, Gypsum, Oolite, Pitchstone, Rock Salt, Serpentine.

6. Describe the Coprolite bed of Cambridge, giving its position in the geological series, and mentioning the chief fossils.

SATURDAY, *November 29, 1884.* 9—12.

ZOOLOGY. I.

1. DESCRIBE the general characters of the following classes of the Vertebrata: Pisces, Amphibia, Aves, Mammalia.
2. Describe and compare the nervous and renal organs of *Lumbricus* and *Anodon*.
3. What forms of ear are met with in Arthropods, Molluscs and Vertebrates? Indicate briefly the process of development of the ear in Vertebrates.
What do you consider to be the essential features of an auditory organ?
4. Give a careful and detailed account of the structure of the body wall in *Hydra*, mentioning the functions of the various parts.
5. What is meant by the term "discontinuous distribution"? Give an instance of it. How do you account for it?
6. Give a short account of the brain in *Perca*, *Rana*, *Columba* and *Mus*, pointing out the most important differences between them.

SATURDAY, *November 29, 1884.* 2—5.

BOTANY. II.

1. DESCRIBE briefly the specimens A, B, and point out any noteworthy morphological peculiarities which they present.
 2. Describe in technical language the specimens C, D, E, F, and refer them to their natural orders, giving reasons for such reference. Illustrate your description by floral diagrams wherever you can conveniently do so.
 3. Give an account of the structures exhibited in the microscopic specimens *a*, *b*.
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SATURDAY, November 29, 1884. 2—5.

CHEMISTRY. II.

1. GIVE a short exposition of the atomic theory, and of the theory of quantivalence, with illustrative examples.

2. Twenty cubic centimetres of a mixture of marsh gas and olefiant gas are exploded with sixty cubic centimetres of oxygen. The resulting gases are treated with caustic potash, which absorbs all but eight cubic centimetres. Give an account of the reactions which have taken place, expressing them in the form of equations, and calculate the amount of marsh gas and of olefiant gas respectively in the original mixture.

3. Write down the names, formulæ, molecular weights and densities of the oxides of nitrogen, and state briefly one method of preparing each.

How would you explain any apparent anomaly in the density of any of these bodies?

4. How is potassium ferrocyanide prepared? Describe the action of dilute and concentrated sulphuric acid respectively on it.

5. In what compounds does arsenic occur in nature? How may it be prepared?

Compare the oxides and acids of arsenic with the corresponding phosphorus compounds.

6. Give an account of the actions of chlorine on olefiant gas, marsh gas, caustic potash, and mercury.

7. How are potassium manganate and permanganate prepared?

Give instances of the application of their oxidising action in any important chemical reactions or determinations.

Calculate the volume of oxygen evolved on heating 3.16 gram. of potassium permanganate with strong sulphuric acid. [Mn = 55, K = 39.]

8. What are the chief points of chemical resemblance and difference between (1) cadmium, zinc and magnesium, (2) barium, strontium and calcium?

SATURDAY, *November 29, 1884.* 2—5.

GEOLOGY. II

1. DESCRIBE the mode of formation of valleys, and give the reasons for the diversity in the shapes assumed by valleys in different districts, naming instances in illustration of your answer.

2. Compare the action of the atmospheric agents and the sea as agents of denudation both in respect to the potency of their action and the nature of the resulting scenic features.

3. Give instances of rocks now being formed by chemical action, and explain the action.

4. What are the reasons for regarding the clay deposits which cover so large a portion of Great Britain north of the Thames as due to glacial action?

5. Name the most important limestones in the geological series, stating the constitution of each, and the origin of the materials composing it.

6. Give the succession of Carboniferous beds in Mid-England and Scotland and point out the differences between the beds in the two areas. How are these differences to be explained?

7. Describe and name the specimens 1—4.

SATURDAY, *November 29, 1884.* 2—5.

ZOOLOGY. II

1. DESCRIBE and compare the integuments of *Astacus*, *Asterias*, *Testudo* and *Columba*.

2. Give a short description of the ovum of the chick before fertilisation and describe more particularly the changes which take place in it as the result of the fertilisation up to the time when the egg is laid.

3. What is the relation between the extinct and living fauna of any given geographical region? How do you account for this relation?

4. Describe the respiratory organs in *Blatta*, *Astacus*, *Anodon* and *Mus*, pointing out how the essential part of the respiratory process is provided for in each case.

5. Give a short description of the pelvic and pectoral girdles of *Columba* and *Mus*.

6. Draw and describe the specimens A, B, C.

MONDAY, December 1, 1884. 9—12.

BOTANY. III.

1. DESCRIBE the forms of phyllotaxis of most common occurrence, and give illustrative examples.
2. Give an account of the interchanges which take place between a green leaf and the atmosphere, briefly indicating the conditions under which the processes respectively occur, and the structures more immediately concerned in them.
3. Describe the process by which the stems of twining plants twine round supports, giving examples.
4. Describe an ordinary stamen, and compare it with a foliage leaf.
Why is a stamen regarded as a kind of leaf?
5. Give an account of the forms and chief points of structure of the vegetative organs of *either* Ferns or Club-Mosses, and briefly point out the distinctions between the organs of reproduction of these two groups of plants.
6. Describe fully the Natural Order Leguminosæ, and give the names and characters of its sub-orders.

MONDAY, December 1, 1884. 9½—12½.

PRACTICAL CHEMISTRY.

The answers must include an account of all the observations made, and the conclusions drawn from them.

The chemical changes involved in the processes adopted should be briefly indicated, in the form of equations or otherwise.

No credit will be given for a statement of results unless the above instructions are attended to.

1. FIND the acid constituent of A.
 2. B is a simple salt; find its component parts.
 3. C is a double salt; make a qualitative analysis of it.
 4. Find out what you can about D without bringing it into solution.
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MONDAY, December 1, 1884. 9—12.

GEOLOGY. III.

1. TRACE the various steps in the formation of a great mountain chain.
 2. Explain the following terms, giving a diagram where possible:—*strike fault, reversed fault, trough fault, hade, throw of a fault, slickensided surfaces.*
 3. Describe the Jurassic beds of the West of England, and give their chief palæontological characteristics.
 4. Give the zoological position and geological range of the following genera: *Anoplotherium, Belemnites, Calceola, Ceratites, Cerithium, Favosites, Hemicidaris, Micraster, Palæomiscus, Pectunculus, Phacops, Scaphites.*
 5. What are the chief characteristics of the "Crag" beds? State the localities where they occur and their geological position.
 6. Give a short description of the Archæan beds of Great Britain, stating where they have been identified, and how they are related to the overlying beds.
 7. Name the specimens 1—8, giving the characters by which you identify each.
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MONDAY, December 1, 1884. 9—12.

ZOOLOGY. III.

1. GIVE a short account of the development and structure of the eye of the chick.
 2. Describe the general characters of the following groups: Protozoa, Cœlenterata, Annelida, Vertebrata.
 3. Describe the proctodæum and stomodæum and their appendages in *Blatta*, *Astacus* and *Mus*.
 4. Give a brief account of the anatomy of any Ascidian. To what group of animals are the Ascidians most closely allied?
 5. What are the several purposes subserved by the circulation of the blood in Vertebrates? Describe cases in the animal kingdom where these purposes are attained by separate fluids.
 6. Describe and name the specimens I, II, III, giving your reasons in each case.
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FIRST EXAMINATION FOR M.B. DEGREE.

TUESDAY, *December 2*, 1884. 9—1.

ELEMENTARY BIOLOGY.

PRACTICAL EXAMINATION.

1. MAKE a transverse and a longitudinal section of *Z*, and explain your preparations by means of sketches.
 2. Identify the microscopic preparations given to you (Arabic numerals).
 3. Dissect out the heart and arterial system of the Frog. Leave your dissection with a lettered drawing of the parts shown for the inspection of the Examiners.
 4. Name, draw and *briefly* describe *A*, *B*, *C*.
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WEDNESDAY, *December 3*, 1884. 9—12.

N.B. Candidates are expected to show a competent knowledge of both branches of the subject, i.e. both in those questions relating to plants and in those relating to animals.

ELEMENTARY BIOLOGY.

1. How far can you establish by microscopical observation an essential similarity between a yeast cell and a protococcus cell?

Assuming that there exists an essential similarity between them, what special differences account for the difference in food supply required by the two cells?

2. Describe the structure and development of the Carpogonium of Chara. Why would it be incorrect to describe it as a sporangium?

3. Describe the transverse section of the root of the bean or of the root of any dicotyledonous plant.

How are the secondary roots of the bean arranged? What is the cause of this arrangement?

4. What do you understand by "morphological differentiation" and by "physiological differentiation"? Illustrate your answer by reference to any of the animals or plants in the Schedule.
5. Describe with figures, the structure of the body wall of *Hydra*. Point out the most striking features in which *Hydra* differ from *Lumbricus*.
6. What functions are fulfilled by the kidneys? Describe briefly and compare with one another the organs which discharge these functions in *Anodon*, *Lumbricus* and *Astacus*.
7. Describe briefly, with figures, the heart and arterial system of *Scyllium*; and compare them with those of *Rana* and of *Lepus*.
8. Describe the structure and life-history of *Vorticella*.
What are the essential points of difference between Protozoa and the higher animals (Metazoa)?
9. Contrast with one another the early stages of development of *Amphioxus* and of *Rana*; and explain the differences as far as you can.

THURSDAY, December 4, 1884. 9 A.M. to 12 M.

CHEMISTRY.

1. You are given a heavy dark-red volatile liquid. What experiments would you perform in order to determine whether the body is an element or a compound?
2. Explain clearly the leading facts summarised in the following names and formulae.

<i>Name.</i>	<i>Formula.</i>
Hydrochloric acid.	HCl.
Water.	H ₂ O.
Alcohol.	C ₂ H ₅ O.

3. The equivalents of cadmium and silver are 56 and 108 respectively. What facts does this statement express? How would you propose to determine the equivalent, or equivalents, of iron?
4. How many grams of each of the following compounds respectively contain 100 grams of sulphur; (1) sodium sulphite, (2) carbon disulphide, (3) sulphur trioxide? How would you prepare these quantities of the above mentioned compounds from 100 grams of sulphur?
(Na = 23, S = 32, O = 16, C = 12.)
5. Why was the name oxygen given to the elementary gas obtained by heating red oxide of mercury? On what grounds was this name subsequently objected to? Shew, by stating the composition and reactions of classes of the compounds of this element, that the name is not unsuitable.

6. Give illustrations of compounds containing EITHER manganese OR chromium, in which the manganese (or chromium) acts as (1) *an acid-forming element*, (2) *a salt-forming or positive element*. Explain the expressions in italics.

7. If you were given ordinary yellow phosphorus how would you change it into the allotropic red phosphorus? and by what experiments would you prove that both forms of phosphorus are elementary bodies?

What do you understand by the term *allotropy*?

8. Why are the following oxides called *peroxides*; BaO_2 , CrO_2 , MnO_2 ? Why are the following called *anhydrides*; CrO_3 , N_2O_5 , P_2O_5 ?

9. Shew by statements of actually occurring reactions that the alcohols are analogous, among carbon compounds, to the metallic hydroxides.

10. To what class of carbon compounds does glycerin belong? Give as many reasons as you can for so classifying it.

11. Why are the paraffins called *saturated*, and the olefines *unsaturated* compounds? Is benzene a saturated compound or not? Illustrate your answer by statements of reactions which really occur.

12. What are the general properties and reactions of aldehydes? How is ethylic aldehyde prepared, and by what reactions can acetic acid be obtained from it? How is chloral related to ethylic aldehyde, and by what reactions can it be shewn that chloral is a true aldehyde?

THURSDAY, Dec. 4, 1884. 1.30—4 P.M.

MECHANICS AND HYDROSTATICS.

1. DEFINE velocity and acceleration and explain how uniform velocities are measured.

Define carefully the unit of time generally adopted in measuring velocities.

2. Enunciate the first two of Newton's laws of motion.

Shew that there is a force acting on a body which moves with uniform velocity in a circle.

3. Define work and energy.

Find the amount of work done in pushing a mass of 10 lbs. through 5 feet up an incline of one in ten, neglecting friction.

4. Distinguish between a solid and a fluid, giving typical examples of each.

What do you understand by an elastic solid?

5. A body is acted upon by two forces, one of 500 dynes due North and one of 250 dynes North-East; find the resultant force.

6. Describe a balance and explain its use.

Upon what conditions does the sensitiveness of a balance depend?

7. What do you understand by the pressure of a gas?

Explain carefully how the pressure of a gas in a closed receiver can be measured.

8. Describe the mode of action of the Bramah press.

Shew, from the consideration that the work done by the plunger is equal to that done by the piston, that the forces exerted by the plunger and piston are proportional to their areas.

9. The density of a substance being defined as the mass of a unit of volume of the substance, shew precisely how this can be determined in the case of a small solid body.

10. What is meant by the diffusion of gases or liquids?

Describe an experiment designed to exhibit the diffusion of gases.

FRIDAY, December 5, 1884. 9—12.

OPTICS, HEAT AND ELECTRICITY.

1. STATE the laws of reflection of light, and find the position of the object for a given position of the image, in a spherical concave mirror.

2. Explain the action of spectacles.

Of two equally far sighted persons, one has the habit of wearing his spectacles low down on his nose, the other wears them close to his eyes. Which should have the stronger spectacles, the object being held at the same distance from the eye by both persons?

3. What is meant by total internal reflexion?

Explain why a cube of glass can never shew any prismatic separation of the rays. What ought to be the refractive index of a substance that such a separation should just be possible?

4. Distinguish clearly between heat and temperature.

Describe some form of a maximum and of a minimum thermometer.

5. Distinguish between specific heat at constant pressure and at constant volume, and explain how the value of one can be obtained from that of the other in the case of a perfect gas. Does the distinction apply to solids and liquids as well as to gaseous bodies?

6. State the laws of attraction and repulsion of electrified bodies.

Two small spheres *a* and *b* charged with the same quantity of positive electricity are placed at a distance of one metre. Where should a sphere *c* holding twice the amount of electricity be placed so that the electrical forces on *b* may be in equilibrium (1) when *c* is charged positively, (2) when *c* is charged negatively?

7. An insulated sphere is brought into the neighbourhood of an electrified body. Will the sphere become electrified and if so in what manner? What effect would be produced if the sphere were touched with the finger? Would it matter where it was touched?

8. Describe two forms of voltaic cells.

Describe the different ways of combining voltaic cells.

Three cells having an electromotive force of one volt each, and an internal resistance of 2 ohms are available; how would you arrange them, so as to obtain the greatest current through a circuit of 2 ohms resistance?

9. State the laws of attraction and repulsion of wires carrying electric currents, (1) when the wires are parallel, and (2) when they are inclined to each other.

10. Describe the characteristic properties of a bar magnet, and define a magnetic pole.

Explain how electric currents are measured by means of a galvanometer.

FRIDAY, December 5, 1884. 1.30 P.M. to 4.30 P.M.

PRACTICAL CHEMISTRY.

More credit will be given for a few experiments done carefully and accurately than for many experiments inaccurately performed.

Write out a clear account of every experiment you make, and explain the chemical changes which occur. Leave the specimens you prepare, marked with your name, and a statement indicating distinctly what each is.

1. A is a double salt containing ammonia. What other base, and what acid does it contain? Prepare, from A, a pure specimen of the other *base; and also a solution of ammonia in water, 100 cubic centimetres of which solution contain 1 gram of NH_3 . An aqueous solution of hydrochloric acid of known strength is given.

[* Base here means a metallic hydroxide.]

2. B is a metal and C is an aqueous solution of an acid. Prove experimentally that C contains 'hydrogen replaceable by metal'.

3. D is benzene. From it prepare sufficient nitrobenzene and aniline to give the characteristic tests for these compounds.

SATURDAY, December 6, 1884. 9 A.M. to 12 M.

PRACTICAL CHEMISTRY.

More credit will be given for a few experiments done carefully and accurately than for many experiments inaccurately performed.

Write out a clear account of every experiment you make, and explain the chemical changes which occur. Leave the specimens you prepare, marked with your name, and a statement indicating distinctly what each is.

1. A is a sample of strong sulphuric acid. What impurities commonly found in the commercial acid does A contain? Dilute A so that 100 cubic centimetres of the solution may contain 5 grams of H_2SO_4 . An aqueous solution of caustic soda of known strength is given.

2. B is ordinary copper sulphate. Perform experiments with this salt, and with compounds prepared from it, to illustrate the meaning of the expression 'water of crystallisation'.

3. C is methylated spirits. Prepare from it an aqueous solution of acetic acid as free from impurities as you can obtain it; and perform experiments with this solution shewing the chief properties of the acid.

SECOND EXAMINATION FOR M.B. DEGREE.

FRIDAY, *December 5*, 1884. 9—12.

PHYSIOLOGY.

1. GIVE an account of the manner in which growing cartilage increases in bulk, describing the histological changes which occur in the cells and in the matrix, and stating what is known as to the manner in which the nutrition of cartilage is carried out.
 2. Describe the structure of a capillary and give an account of the phenomena of the circulation of the blood in the small arteries, in the capillaries, and in the small veins, and an account of the changes which take place in these phenomena when the blood flow is more rapid, and when it is slower than normal. What circumstances determine the emigration of the white blood corpuscles?
 3. What are the main differences which exist between arterial blood going to and venous blood coming from a muscle at rest? What changes in the qualities of the blood passing through a muscle are caused by the muscle contracting? How are these changes determined? What conclusions do you draw from the facts you mention?
 4. Describe the structure of the mucous membrane of the small intestine. State what is known concerning the agencies by which, and the state in which, the products of digestion in the small intestine are absorbed and the immediate fate of the absorbed products.
 5. State the several differences of structure which obtain between the spinal cord in the cervical region and the spinal cord in the lumbar region, including the differences in the white matter which can be made out by physiological experiment, by pathological observation, or by a study of the development of the cord. What conclusions concerning the function of the cord may be drawn from the facts you mention?
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FRIDAY, December 5, 1884. 2 P.M.

1. How are tinctures, infusions and decoctions made?
What are the menstrua employed in making tinctures?
 2. Describe the method given in the British Pharmacopœia for the preparation of Chloroform. A specimen contains alcohol; how may this be detected?
 3. A specimen of Hydrargyrum cum Cretâ is contaminated with mercuric oxide. How would you detect this impurity? If arsenic were accidentally present, how would you determine its presence?
 4. What are the officinal varieties of Cinchona bark? What alkaloids do they contain? Describe and explain the pharmacopœial method of testing the value of one of these barks.
 5. Enumerate the officinal preparations containing arsenic.
 6. What ingredients are contained in:
 - Decoctum Aloes Compositum.
 - Mistura Gentianæ.
 - Liquor Bismuthi et Ammonię Citratis.
 - Syrupus Ferri Phosphatis.
 - Pulvis Jalapæ Compositus.
 - Pulvis Kino Compositus.
 - Tinctura Camphoræ Composita.
 - Linimentum Camphoræ Compositum.
 - Pilula Hydrargyri Subchloridi Composita.
 - Pilula Rhei Composita.
 7. Give the pharmacopœial names of
 - Sal volatile.
 - Paregoric.
 - Black wash.
 - White precipitate.
 8. How much of each of the following substances contains one grain of opium?
 - Confectio Opii.
 - Pilula Saponis Composita.
 - Pulvis Ipecacuanhæ Compositus.
 - Pilula Plumbi cum Opio.
-

SATURDAY, *December 6, 1884.* 9 A.M. to 12 M.

HUMAN ANATOMY.

1. DESCRIBE the structures making up the spermatic cord. Trace each from its origin to its termination. Give an account of the coverings of the cord, of the structures through which it passes, and of its relations.
 2. Describe the musculature of the pharynx. If the whole pharynx were removed, what parts would be found to have been in immediate contact with it? Illustrate your answer by a diagram of a transverse section of the neck through the second intervertebral disk.
 3. Give the dissection necessary to exhibit the corpus striatum. Describe the arrangement of the structures making up this body, and tell what you know of the course of the fibres related thereto. Illustrate this by diagrams of sections in different planes.
 4. Give the course, distribution, and connections with other nerves, of the pneumogastric nerve.
 5. Give the dissection necessary to expose the posterior tibial and peroneal arteries. Describe their deep relations, branches, and anastomoses.
 6. What are the sources from which the various nutrient arteries of the six long bones are derived? Give the course and direction of each, and its muscular relations at its point of entrance.
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MONDAY, *December 8, 1884.* 9—2.

PRACTICAL PHYSIOLOGY.

1. IMBED and prepare sections of (a). Mount two sections, staining them so as to differentiate as clearly as possible the tissues present. Describe your treatment of the sections. Draw one section under a low power and name the various parts of it.
 2. Put up preparations of (b), and describe your preparations.
 3. Mount and describe the stained section (c).
 4. Determine the features in which the urine marked (d) differ from normal human urine.
 5. Arrange the apparatus for taking with the muscle-nerve preparation (e) a tracing of the effect produced on the muscle by a single induction shock sent into the nerve.
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THIRD EXAMINATION FOR M.B. DEGREE.

PART I.

TUESDAY, *December 9*, 1884. 9 A.M. to 12 M.

PRINCIPLES OF SURGERY.

1. DESCRIBE the process of Inflammation, specifying the changes which take place in the blood-vessels and the blood, and give the rationale of the several local methods of treating an inflammatory affection of the hand.
 2. Describe the changes which take place during the reunion of a long bone after fracture.
 3. Gangrena senilis—the causes, processes which take place, symptoms and treatment.
 4. What are the features by which you recognise malignancy in a tumour? Name the growths which are usually regarded as malignant.
 5. What effects upon the bladder and other parts of the urinary apparatus may be caused by the presence of a stone in the bladder? How may these effects be diagnosed?
 6. Describe the local and general conditions which may follow a poisoned wound of the skin.
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TUESDAY, *December 9, 1884.* 9 A.M. to 12 M.

PRINCIPLES OF SURGERY.

1. DESCRIBE the changes which take place in an artery after the application of a ligature in its continuity.
 2. Describe the varieties of Gangrene, giving briefly the causes, symptoms and treatment of each.
 3. Name the varieties of Urinary Calculi, and give the general and chemical characters of each.
 4. Describe the changes which take place in a long bone after fracture.
 5. What circumstances would lead you to diagnose malignity in a tumour?
 6. Describe the local and general conditions which may follow a poisoned wound of the skin.
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TUESDAY, *December 9, 1884.* 2—4.30 P.M.

MIDWIFERY.

1. WHAT is Meconium? Where is it in the adult foetus? What indications may be derived from it in a long and difficult labour?
 2. Describe the state of the uterus at the end of the first stage of natural labour, the waters being discharged: giving only so much regarding the foetus as is necessary for answering the question.
 3. Describe anatomically a rupture of the uterus as it most frequently occurs; and give the treatment.
 4. Describe the varieties of endometritis (corporealis and excluding endometritis decidualis) and give the appropriate treatments.
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THIRD EXAMINATION FOR M.B. DEGREE.

PART II.

WEDNESDAY, *December 10, 1884.* 9 A.M. to 12 M.

PATHOLOGY.

1. DESCRIBE the several forms of ulcer observed in the small intestine.
 2. In what parts of the body are morbid accumulations of cholesterin found? Do they ever give rise to symptoms during life?
 3. Three abscesses are observed *post mortem* in the liver of an adult. Name the various anatomical appearances which are likely to be found in other parts of the same body, and discuss their pathological relation to the hepatic abscesses.
 4. Describe the structural lesions of the brain and its membranes which may result from syphilis. To what symptoms are they likely to give rise?
 5. What conditions may give rise to transient or abiding cyanosis?
 6. A micro-organism has been discovered in the bodies of patients suffering from a certain specific disease. State carefully the nature of the evidence you would consider necessary to establish the *causal* connexion of the micro-organism with the disease, illustrating your answer by reference to any case with which you are familiar.
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WEDNESDAY, *December 10, 1884.* 2 to 4.30 P.M.

ELEMENTS OF HYGIENE.

1. WHAT are the essential features of a healthy dormitory in a school?
 2. Discuss the use of the cold bath in relation to health.
 3. Discuss the influence of habitual alcoholic excess as a cause of mental disease. What would you consider to be excess?
 4. Mention any facts on record which go to prove that water contaminated with the excreta of cholera patients, or with the excreta of cases of enteric fever, is dangerous to health.
 5. Discuss the value of quarantine as a protection against pestilence in the case of (1) a continental country, (2) an island like Great Britain.
 6. Compare as regards efficiency the more familiar disinfectants. What method would you adopt to render harmless the bedding, clothes, etc. of a patient dead of small-pox?
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THURSDAY, December 11, 1884. 9 A.M. to 12 M.

PRINCIPLES AND PRACTICE OF PHYSIC.

1. COMPARE the condition of mitral reflux with that of mitral stenosis as regards their effects respectively on the several chambers of the Heart and on the circulation.
2. Describe the invasion of Variola, mention other eruptions liable to be mistaken for it, and enumerate in their order (without further description) the salient features of the disease when unmodified.
3. Describe an attack of acute nephritis in a child of eight years old. To what points in the previous history would your inquiries be directed; and what would be the general principles of treatment?
4. Enumerate the conditions in which the *spleen* undergoes enlargement.
5. Write out the appropriate diet for a case of Enteric Fever beginning with that for the end of the first week and including the diet for the week in which the patient is first able to walk about his room.
6. What are bed sores? What steps are to be taken to prevent their occurrence in cases of fever and in cases of long-lasting hemiplegia? Are they ever impossible to prevent?

THURSDAY, December 11, 1884. 2 to 4 P.M.

MEDICAL JURISPRUDENCE.

1. DESCRIBE the appearances presented by the abdominal organs in a case of fatal starvation.
2. What appearances would you expect to find in the body of a young woman in whom abortion had recently been criminally induced?
3. The still-warm body of a man is found under a tree; it is supposed he has been struck by lightning. Describe the circumstances which would lead you to report in favour of this supposition.
4. Describe the symptoms and *post-mortem* appearances in a case of acute poisoning (1) by phosphorus, (2) by caustic soda, (3) by strong carbolic acid.
5. You are called on to examine a man who has been taken into custody as drunk and disorderly. He is violently excited, and his breath smells of spirits. From what affections may he be suffering, and how would you distinguish between them?

SATURDAY, December 13, 1884. 2.30 P.M.

PRESCRIPTIONS.

[The prescriptions are to be written without abbreviations, in form to be sent to druggist.]

1. LAY down some general rules as to the choice of hypnotics and directions for their administration, according to the varying circumstances requiring their use.
2. Prescribe for the treatment of
 - (a) an ordinary case of Tertian Ague.
 - (b) an ordinary case of Acute Pleuro-pneumonia in its early stage.
 - (c) an ordinary case of Rheumatic Fever; the patient being 10 years old.
 - (d) a case of poisoning by Opium.
3. Give the respective doses, or ranges of doses, for adults, of the following drugs:—

Morphiæ Hydrochloras

Zinci Valerianas

Tinctura Aconiti

Acid. Hydrocyanicum dilutum

Infus. Digitalis

Liquor Strychniæ

Liquor Arsenicalis.

CARUS GREEK TESTAMENT PRIZES.

THURSDAY, November 13, 1884. 9—12.

BACHELORS.

1. How would you proceed to ascertain the textual character of a Greek manuscript of the New Testament?

2. Estimate the value of Intrinsic probability of a reading.

3. How far is it true that "the Vatican MS. B is one of the three most corrupt copies extant"?

4. Discuss the following statement; nihil aliud esse Theologiam quam grammaticam in Spiritus Sancti verbis occupatam.

5. Investigate and illustrate the poetical element in St Matthew's Gospel.

6. Examine the internal evidence of identity of authorship of Acts and the 3rd Gospel.

7. Estimate the value of the Διδαχὴ τῶν δώδεκα ἀποστόλων in evidence of the date of the Gospels.

8. Annotate in reference both to translation and to exegesis.

a. χρηματισθεὶς δὲ κατ' ὄναρ ἀνεχώρησεν εἰς τὰ μέρη τῆς Γαλιλαίας, καὶ ἐλθὼν κατῴκησεν εἰς πόλιν λεγομένην Ναζαρέτ, ὅπως πληρωθῇ τὸ ρηθὲν διὰ τῶν προφητῶν ὅτι Ναζωραῖος κληθήσεται.

b. ὁ δὲ εἶπεν αὐτοῖς Διὰ τοῦτο πᾶς γραμματεὺς μαθητευθεὶς τῇ βασιλείᾳ τῶν οὐρανῶν ὅμοιός ἐστιν ἀνθρώπῳ οἰκοδεσπότῃ ὅστις ἐκβάλλει ἐκ τοῦ θησανροῦ αὐτοῦ καινὰ καὶ παλαιά.

c. καὶ γὰρ ἐγὼ σοὶ λέγω ὅτι σὺ εἰ Πέτρος, καὶ ἐπὶ ταύτῃ τῇ πέτρᾳ οἰκοδομήσω μου τὴν ἐκκλησίαν, καὶ πύλαι ᾗδου οὐ κατισχύσουσιν αὐτῆς· δώσω σοὶ τὰς κλείδας τῆς βασιλείας τῶν οὐρανῶν, καὶ ὃ ἐὰν δήσῃς ἐπὶ τῆς γῆς ἔσται δεδεμένον ἐν τοῖς οὐρανοῖς, καὶ ὃ ἐὰν λύσῃς ἐπὶ τῆς γῆς ἔσται λελυμένον ἐν τοῖς οὐρανοῖς.

d. ὁ δὲ ἂν βλασφημήσῃ εἰς τὸ πνεῦμα τὸ ἅγιον, οὐκ ἔχει ἄφεσιν εἰς τὸν αἰῶνα, ἀλλὰ ἐνοχός ἐστιν αἰωνίου ἁμαρτήματος.

e. καὶ ὁ δὲ ἂν σκανδαλίσῃ ἓνα τῶν μικρῶν τούτων τῶν πιστευόντων, καλὸν ἐστὶν αὐτῷ μᾶλλον εἰ περίκειται μύλος ὄνικος περὶ τὸν τράχηλον αὐτοῦ καὶ βέβληται εἰς τὴν θάλασσαν.

f. τοῦτό ἐστιν τὸ αἷμά μου τῆς διαθήκης τὸ ἐκχυννόμενον ὑπὲρ πολλῶν· ἀμὴν λέγω ὑμῖν ὅτι οὐκέτι οὐ μὴ πῖω ἐκ τοῦ γενήματος τῆς ἀμπέλου ἕως τῆς ἡμέρας ἐκείνης ὅταν αὐτὸ πίνω καινὸν ἐν τῇ βασιλείᾳ τοῦ θεοῦ.

g. καὶ αὐτὸς προελεύσεται ἐνώπιον αὐτοῦ ἐν πνεύματι καὶ δυνάμει Ἡλεία ἐπιστρέψαι καρδίας πατέρων ἐπὶ τέκνα καὶ ἀπειθεῖς ἐν φρονήσει δικαίων, ἐτοιμάσαι Κυρίῳ λαὸν κατεσκευασμένον.

h. κύριός ἐστιν τοῦ σαββάτου ὁ υἱὸς τοῦ ἀνθρώπου.

i. ἄφρονες, οὐχ ὁ ποιήσας τὸ ἔξωθεν καὶ τὸ ἔσωθεν ἐποίησεν; πλὴν τὰ ἐνόντα δότε ἐλεημοσύνην, καὶ ἰδοὺ πάντα καθαρά ὑμῖν ἐστίν.

j. ὁ νόμος καὶ οἱ προφῆται μέχρι Ἰωάννου· ἀπὸ τότε ἡ βασιλεία τοῦ θεοῦ εὐαγγελίζεται καὶ πᾶς εἰς αὐτὴν βιάζεται. Εὐκοπώτερον δέ ἐστιν τὸν οὐρανὸν καὶ τὴν γῆν παρελθεῖν ἢ τοῦ νόμου μίαν κερέαν πεσεῖν.

k. λύσατε τὸν ναὸν τοῦτον καὶ [ἐν] τρισὶν ἡμέραις ἐγερῶ αὐτόν.

l. ὑμεῖς ἀνάβητε εἰς τὴν ἑορτὴν· ἐγὼ οὐκ ἀναβαίνω εἰς τὴν ἑορτὴν ταύτην, ὅτι ὁ ἐμὸς καιρὸς οὐκ ἔστι πεπλήρωται.

m. ἦν δὲ πρωί· καὶ αὐτοὶ οὐκ εἰσῆλθον εἰς τὸ πραιτώριον, ἵνα μὴ μισθῶσιν ἀλλὰ φάγωσιν τὸ πᾶσχα.

9. Discuss the points of contact and difference in the λόγος of St John and the λόγος of Philo.

10. Trace the argument of St Stephen's speech. Examine the objection raised on account of want of distinctiveness in its style: and classify and account for the "discrepancies" in the speech.

11. Translate and annotate the following:

a. τοῦτον τῇ ὀρισμένῃ βουλῇ καὶ προγνώσει τοῦ θεοῦ ἔκδοτον διὰ χειρὸς ἀνόμων προσπήξαντες ἀνείλατε, ὃν ὁ θεὸς ἀνέστησεν λύσας τὰς ὠδῖνας τοῦ θανάτου, καθότι οὐκ ἦν δυνατόν κρατεῖσθαι αὐτὸν ὑπ' αὐτοῦ.

b. μετανόησον οὖν ἀπὸ τῆς κακίας σου ταύτης, καὶ δεήθητι τοῦ κυρίου εἰ ἄρα ἀφεθήσεται σοι ἡ ἐπίνοια τῆς καρδίας σου. εἰς γὰρ χολὴν πικρίας καὶ σύνδεσμον ἀδικίας ὀρῶ σε ὄντα.

c. ὥς καὶ ἐν τῷ ψαλμῷ γέγραπται τῷ δευτέρῳ Υἱὸς μου εἰ σύ, ἐγὼ σήμερον γεγέννηκά σε.

d. οἵτινες τῷ Παύλῳ ἔλεγον διὰ τοῦ πνεύματος μὴ ἐπιβαίνειν εἰς Ἱεροσόλυμα.

e. τότε ὁ Παῦλος παραλαβὼν τοὺς ἄνδρας τῇ ἐχομένῃ ἡμέρᾳ σὺν αὐτοῖς ἀγνισθεῖς εἰσῆλθε εἰς τὸ ἱερόν, διαγγέλλων τὴν ἐκπλήρωσιν τῶν ἡμερῶν τοῦ ἀγνισμοῦ ἕως οὗ προσηέχθη ὑπὲρ ἐνὸς ἐκάστου αὐτῶν ἢ προσφορά.

12. a. Discuss fully the evidence for and against the readings of Luke ii. 14

ἐν ἀνθρώποις εὐδοκία.

... ... εὐδοκίας.

b. Correct the text of the following :

καὶ γὰρ κινδυνεύομεν ἐγκαλεῖσθαι στάσεως περὶ τῆς σήμερον, μηδενὸς αἰτίου ὑπάρχοντος περὶ οὗ δυνησόμεθα ἀποδοῦναι λόγον τῆς συστροφῆς ταύτης.
Acts xix. 40.

c. Give your reasons for preference of reading in following :

i. τοῦ δὲ Ἰησοῦ Χριστοῦ ἡ γένεσις οὕτως ἦν.

τοῦ δὲ Χριστοῦ Ἰησοῦ ἡ γένεσις

Matt. i. 18.

ii. Σὺ πιστεύεις εἰς τὸν υἱὸν τοῦ θεοῦ.

... .. ἀνθρώπου.

John ix. 35.

13. Illustrate from the Gospels and Acts the use of τοῦ with the infinitive: of ἵνα with subjunctive: of the preposition εἰς.

14. Retranslate :

a. For then shall be great tribulation, such as was not since the beginning of the world to this time, no, nor ever shall be. And except those days should be shortened, there should no flesh be saved: but for the elect's sake those days shall be shortened.

b. For the earth bringeth forth fruit of herself; first the blade, then the ear, after that the full corn in the ear. But when the fruit is brought forth, immediately he putteth in the sickle, because the harvest is come.

c. When thou goest with thine adversary to the magistrate, as thou art in the way, give diligence that thou mayest be delivered from him; lest he hale thee to the judge, and the judge deliver thee to the officer, and the officer cast thee into prison.

d. So when they had dined, Jesus saith to Simon Peter, Simon, son of Jonas, lovest thou me more than these? He saith unto him, Yea, Lord; thou knowest that I love thee. He saith unto him, Feed my lambs. He saith to him again the second time, Simon, son of Jonas, lovest thou me? He saith unto him, Yea, Lord; thou knowest that I love thee. He saith unto him, Feed my sheep. He saith unto him the third time, Simon, son of Jonas, lovest thou me? Peter was grieved because he said unto him the third time, Lovest thou me? and he said unto him, Lord, thou knowest all things; thou knowest that I love thee. Jesus saith unto him, Feed my sheep.

e. But Peter said, Ananias, why hath Satan filled thine heart to lie to the Holy Ghost, and to keep back part of the price of the land? Whiles it remained, was it not thine own? and after it was sold, was it not in thine own power? why hast thou conceived this thing in thine heart? thou hast not lied unto men, but unto God.

15. Discuss the following words and phrases :

ἀντάλλαγμα—παράσημον—ἀπελεγμός—κατάλυμα—συντέλεια τοῦ αἰῶνος—ἐπισύσιος—δίκαιος—εὐλαβής—ἀγαθός—καλός—πραγματεύεσθαι—παραδευματίζειν—σφραγίζειν—λικμᾶν—ἀλίζεσθαι—ἀνασκευάζειν—κερδῆσαι—προέλαβε μυρίσαι—ἔσοι ἂν ᾗπτοντο—ῥύσαι ἀπὸ τοῦ πονηροῦ.

THURSDAY, November 13, 1884. 1—4.

BACHELORS.

1. GIVE an account of 'the Muratorian Fragment' on the Canon. Which of the Epistles now received into the Canon are not mentioned in it? Account for the omission in each case. State fully the evidence on which any one of these Epistles has been received by the Church.

2. Describe fully any Manuscript of the Pauline Epistles which is preserved in any of the Libraries in Cambridge.

3. Give an account of the successive Latin Versions of the New Testament, illustrating by quotations the main characteristics of each.

4. Shew from St Paul's Epistles that he was acquainted with the technical terms of Greek Philosophy. Compare and contrast Christianity as preached by him with the Stoicism of Epictetus and Marcus Aurelius.

5. What foundation is there for the statement that the First Epistle of St Peter "in its language and tone occupies a place midway between the writings of St James and St Paul"?

6. Compare and contrast the language of the Apocalypse with that of other writings ascribed to St John. Account for the differences in style and imagery.

7. Translate with notes critical and explanatory:

(a) πάντες γὰρ ἡμαρτον καὶ ὑστεροῦνται τῆς δόξης τοῦ θεοῦ, δικαιούμενοι δωρεὰν τῇ αὐτοῦ χάριτι διὰ τῆς ἀπολυτρώσεως τῆς ἐν Χριστῷ Ἰησοῦ ὃν προέθετο ὁ θεὸς ἱλαστήριον διὰ πίστεως ἐν τῷ αὐτοῦ αἵματι εἰς ἐνδειξιν τῆς δικαιοσύνης αὐτοῦ διὰ τὴν παρέσιν τῶν προγεγονότων ἀμαρτημάτων ἐν τῇ ἀνοχῇ τοῦ θεοῦ, πρὸς τὴν ἐνδειξιν τῆς δικαιοσύνης αὐτοῦ ἐν τῷ νῦν καιρῷ, εἰς τὸ εἶναι αὐτὸν δίκαιον καὶ δικαιούντα τὸν ἐκ πίστεως Ἰησοῦ.

(b) ἀλλὰ ἐπαράθη τὰ νοήματα αὐτῶν. ἄχρι γὰρ τῆς σήμερον ἡμέρας τὸ αὐτὸ κάλυμμα ἐπὶ τῇ ἀναγνώσει τῆς παλαιᾶς διαθήκης μένει μὴ ἀνακαλυπτόμενον, ὅτι ἐν Χριστῷ καταργεῖται, ἀλλ' ἕως σήμερον ἡνίκα ἂν ἀναγινώσκηται Μωυσῆς κάλυμμα ἐπὶ τὴν καρδίαν αὐτῶν κείται· ἡνίκα δὲ εὖ ἐπιστρέψῃ πρὸς Κύριον, περιαιρεῖται τὸ κάλυμμα. ὁ δὲ κύριος τὸ πνεῦμά ἐστιν οὗ δὲ τὸ πνεῦμα Κυρίου, ἐλευθερία. ἡμεῖς δὲ πάντες ἀνακαλυμμένοι προσώπῃ τὴν δόξαν Κυρίου κατασπριζόμενοι τὴν αὐτὴν εἰκόνα μεταμορφούμεθα ἀπὸ δόξης εἰς δόξαν, καθάπερ ἀπὸ κυρίου πνεύματος.

(c) οὐ γὰρ προσελήλυθατε ψηλαφωμένῃ καὶ κεκαυμένῃ πυρὶ καὶ γνόφῃ καὶ ζόφῃ καὶ θυέλλῃ καὶ σάλπιγγος ἤχῳ καὶ φωνῇ ῥημάτων, ἧς οἱ ἀκούσαντες παρητήσαντο προστεθῆναι αὐτοῖς λόγον· οὐκ ἔφερον γὰρ τὸ διαστελλόμενον. Κἀν θηρίον θίγη τοῦ ὄρους, λιθοβοληθήσεται· καί, οὕτω φοβερόν ἦν τὸ φανταζόμενον, Μωσὴς εἶπεν Ἐκφοβός εἰμι καὶ ἐντρομος.

(d) εἴ τις ἐν λόγῳ οὐ πταίει, οὗτος τέλειος ἀνὴρ, δυνατὸς χαλιναγωγῆσαι καὶ ὄλον τὸ σῶμα. εἰ δὲ τῶν ἱππῶν τοὺς χαλινούς εἰς τὰ στόματα βάλωμεν εἰς τὸ πείθεσθαι αὐτοὺς ἡμῖν, καὶ ὄλον τὸ σῶμα αὐτῶν μετάγομεν· ἰδοὺ καὶ τὰ πλοῖα, τηλικαῦτα ὄντα καὶ ὑπὸ ἀνέμων σκληρῶν ἐλαυνόμενα, μετάγεται ὑπὸ ἐλαχίστου πηδαλίου ὅπου ἡ ὁρμὴ τοῦ εὐθύνοντος βούλεται· οὕτως καὶ ἡ γλῶσσα μικρὸν μέλος ἐστὶν καὶ μεγάλη ἀνχεί. ἰδοὺ ἡλίκον πῦρ ἡλίκην ὕλην ἀνάπτει· καὶ ἡ γλῶσσα πῦρ, ὁ κόσμος τῆς ἀδικίας ἡ γλῶσσα καθίσταται ἐν τοῖς μέλεσιν ἡμῶν, ἡ σπιλοῦσα ὄλον τὸ σῶμα καὶ φλογίζουσα τὸν τροχὸν τῆς γενέσεως καὶ φλογιζομένη ὑπὸ τῆς γεέννης.

(e) καὶ οἱ ἔμποροι τῆς γῆς κλαίουσιν καὶ πενθοῦσιν ἐπ' αὐτήν, ὅτι τὸν γόμον αὐτῶν οὐδεὶς ἀγοράζει οὐκέτι, γόμον χρυσοῦ καὶ ἀργύρου καὶ λίθου τιμίου καὶ μαργαριτῶν καὶ βυσσίνου καὶ πορφύρας καὶ σιρικοῦ καὶ κοκκίνου, καὶ πᾶν ξύλον θύινον καὶ πᾶν σκεῦος ἐλεφάντινον καὶ πᾶν σκεῦος ἐκ ξύλου τιμιωτάτου καὶ χαλκοῦ καὶ σιδήρου καὶ μαρμάρου, καὶ κιννάμωμον καὶ ἄμωμον καὶ θυμιάματα καὶ μύρον καὶ λίβανον καὶ οἶνον καὶ ἔλαιον καὶ σεμίδαλιν καὶ σῖτον καὶ κτήνη καὶ πρόβατα, καὶ ἱππῶν καὶ ῥεδῶν καὶ σωμάτων, καὶ ψυχὰς ἀνθρώπων. καὶ ἡ ὁπώρα σου τῆς ἐπιθυμίας τῆς ψυχῆς ἀπῆλθεν ἀπὸ σοῦ, καὶ πάντα τὰ λιπαρὰ καὶ τὰ λαμπρὰ ἀπώλετο ἀπὸ σοῦ, καὶ οὐκέτι οὐ μὴ αὐτὰ εὐρήσουσιν.

8. Without translating, discuss any difficulties in the following passages:

(a) ἰδοὺ μυστήριον ὑμῖν λέγω· πάντες οὐ κοιμηθησόμεθα πάντες δὲ ἀλλαγησόμεθα, ἐν ἀτόμῳ, ἐν ῥίπῃ ὀφθαλμοῦ, ἐν τῇ ἐσχάτῃ σάλπιγγι· σαλπίζει γὰρ, καὶ οἱ νεκροὶ ἐγερθήσονται ἄφθαρτοι, καὶ ἡμεῖς ἀλλαγησόμεθα.

(b) ὅτινα ἐστὶν ἀλληγορούμενα· αὗται γὰρ εἰσιν δύο διαθηकाί, μία μὲν ἀπὸ ὄρους Σινά, εἰς δουλείαν γενῶσα, ἥτις ἐστὶν Ἄγαρ, τὸ δὲ Ἄγαρ Σινὰ ὄρος ἐστὶν ἐν τῇ Ἀραβίᾳ, συνστοιχεῖ δὲ τῇ νῦν Ἱερουσαλὴμ, δουλεῖ γὰρ μετὰ τῶν τέκνων αὐτῆς.

(c) αὐτὸς γὰρ ἐστὶν ἡ εἰρήνη ἡμῶν, ὁ ποιήσας τὰ ἀμφότερα ἐν καὶ τὸ μεσότοιχον τοῦ φραγμοῦ λύσας, τὴν ἔχθραν ἐν τῇ σαρκὶ αὐτοῦ, τὸν νόμον τῶν ἐντολῶν ἐν δόγμασιν καταργήσας, ἵνα τοὺς δύο κτίσῃ ἐν αὐτῷ εἰς ἓνα καινὸν ἄνθρωπον ποιῶν εἰρήνην, καὶ ἀποκαταλλάξῃ τοὺς ἀμφοτέρους ἐν ἐνὶ σώματι τῷ θεῷ διὰ τοῦ σταυροῦ ἀποκτείνας τὴν ἔχθραν ἐν αὐτῷ.

(d) χαρισάμενος ἡμῖν πάντα τὰ παραπτώματα, ἐξαλείψας τὸ καθ' ἡμῶν χειρόγραφον τοῖς δόγμασιν ὃ ἦν ὑπεναντίον ἡμῖν, καὶ αὐτὸ ἤρκεν ἐκ τοῦ μέσου προσηλώσας αὐτὸ τῷ σταυρῷ· ἀπεκδυσάμενος τὰς ἀρχὰς καὶ τὰς ἐξουσίας ἐδειγμάτισεν ἐν παρρησίᾳ θριαμβεύσας αὐτοὺς ἐν αὐτῷ.

(ε) μὴ γάρ τις ὑμῶν πασχέτω ὡς φονεὺς ἢ κλέπτης ἢ κακοποιὸς ἢ ὡς ἄλλοτριεπίσκοπος· εἰ δὲ ὡς Χριστιανός, μὴ αἰσχυνέσθω, δοξαζέτω δὲ τὸν θεὸν ἐν τῷ ὀνόματι τούτῳ. ὅτι [ὁ] καιρὸς τοῦ ἄρξασθαι τὸ κρίμα ἀπὸ τοῦ οἴκου τοῦ θεοῦ· εἰ δὲ πρῶτον ἀφ' ἡμῶν, τί τὸ τέλος τῶν ἀπειθούντων τῷ τοῦ θεοῦ εὐαγγελίῳ; καὶ εἰ ὁ δίκαιος μόλις σώζεται, ὁ [δὲ] ἀσεβὴς καὶ ἀμαρτωλὸς ποῦ φανείται; ὥστε καὶ οἱ πάσχοντες κατὰ τὸ θέλημα τοῦ θεοῦ πιστῶ κτίστη παρατιθέσθωσαν τὰς ψυχὰς ἐν ἀγαθοποιίᾳ.

9. Illustrate from the Epistles or Apocalypse the usage of the following words and expressions, carefully distinguishing between words apparently synonymous:

ἀκέραιος—εἰλικρινής—παλιγγενεσία—ἀνακαίνωσις—λαὸς περιούσιος—λαὸς εἰς περιποίησιν—μορφή—σχῆμα—καπηλεύειν—δολοῦν—ψυχικός—σαρκικός—σάρκινος—κοσμικός—χάραγμα—χαρακτήρ—πρόθεσις—προθεσμία.

10. Retranslate the following passages:

(a) Be not conformed to this world: but be ye transformed by the renewing of your mind, that ye may prove what is that good, and acceptable, and perfect, will of God.

(b) Ye are our epistle written in our hearts, known and read of all men: Forasmuch as ye are manifestly declared to be the epistle of Christ ministered by us, written not with ink, but with the Spirit of the living God; not in tables of stone, but in fleshy tables of the heart.

(c) Finally, my brethren, be strong in the Lord, and in the power of his might. Put on the whole armour of God, that ye may be able to stand against the wiles of the devil.

(d) Likewise, ye younger, submit yourselves unto the elder. Yea, all of you be subject one to another, and be clothed with humility: for God resisteth the proud, and giveth grace to the humble.

(e) We know that whosoever is born of God sinneth not; but he that is begotten of God keepeth himself, and that wicked one toucheth him not. And we know that we are of God, and the whole world lieth in wickedness.

11. Explain the following notes, stating the approximate date of the Codices, Versions and Fathers mentioned in them:

(a) *καυχῆσθωμαι* [*καυθήσομαι* (-σθωμαι)] Western and Syrian (Gr. Lat. Syr. [Æth.] Arm. Goth.); incl. C Greek and Latin MSS known to Hier Meth Cyr.al⁴ Tert Cyp Aphr Ephr. Text ^{NA}B Greek MSS known to Hier 17 me the (aeth. codd) go.mg (? Clem.rom) (Clem.al) Orig.^{loc}. Hier.^{Gal}.499, 517 f.; Is.688.

(b) *συνεργει* sine additam cum ^{SCDFGKLP} al ^{omn^{vid}} vg ^{syr^{utr}} cop arm Clem⁸⁶⁴ Or^{4,337}. ⁴⁰³not ⁴⁰³not bis et int^{4,803} Eus^{De}258 Cyr^{hr}2 Chr⁶⁵⁵. ⁶⁵⁶bis Cyr^{cat}147 Thdrⁱ Dam al Lcif¹⁷⁹ Aug^{ep} 149 ac^{88ep} al mu ... Ln add ο θεος cum AB, item Or^{2,569} επει τοις αγ. τ. θε. παντ. συνεργει εισ αγ. ο θεος et^{1,264} ο θεος, ο τοις αγ. αυτον παντα συνεργων εισ αγαθ. (aeth *quod adiuvet eos dominus eos qui amant eum in omni bono*).

THURSDAY, November 13, 1884. 9—12.

UNDERGRADUATES.

1. GIVE a brief account of the origin and the critical value of the Textus Receptus.
2. Write a description of the Codex Bezae, with especial regard to *a.* evidence of date, *b.* character of text.
3. How would you proceed to ascertain the textual character of a Greek manuscript of the New Testament?
4. Estimate the value of Intrinsic probability of a reading.
5. Discuss the following statement; nihil aliud esse Theologiam quam grammaticam in Spiritus Sancti verbis occupatam.
6. St Matthew's Gospel has been described as 'narrative': St Mark's as 'memoirs': St Luke's as 'history': St John's as 'dramatic portraiture'. Explain these descriptions.
7. Examine the value of St Clement's First Epistle in evidence of the date of the Gospels and Acts.
8. Annotate in reference both to translation and to exegesis:
 - a.* χρηματισθεῖς δὲ κατ' ὄναρ ἀνεχώρησεν εἰς τὰ μέρη τῆς Γαλιλαίας, καὶ ἐλθὼν κατέκησεν εἰς πόλιν λεγομένην Ναζαρέτ, ὅπως πληρωθῇ τὸ ῥηθὲν διὰ τῶν προφητῶν ὅτι Ναζωραῖος κληθήσεται.
 - b.* ὁ δὲ εἶπεν αὐτοῖς Διὰ τοῦτο πᾶς γραμματεὺς μαθητευθεὶς τῇ βασιλείᾳ τῶν οὐρανῶν ὁμοίός ἐστιν ἀνθρώπῳ οἰκοδοσπότῃ ὅστις ἐκβάλλει ἐκ τοῦ θησαυροῦ αὐτοῦ καινὰ καὶ παλαιά.
 - c.* καὶ γὰρ δέ σοι λέγω ὅτι σὺ εἶ Πέτρος, καὶ ἐπὶ ταύτῃ τῇ πέτρᾳ οἰκοδομήσω μου τὴν ἐκκλησίαν, καὶ πύλαι ᾗδου οὐ κατισχύσουσιν αὐτῆς· δώσω σοι τὰς κλεῖδας τῆς βασιλείας τῶν οὐρανῶν, καὶ ὃ ἐὰν δέσῃς ἐπὶ τῆς γῆς ἔσται δεδεμένον ἐν τοῖς οὐρανοῖς, καὶ ὃ ἐὰν λύσῃς ἐπὶ τῆς γῆς ἔσται λελυμένον ἐν τοῖς οὐρανοῖς.
 - d.* ὁς δ' ἂν βλασφημήσῃ εἰς τὸ πνεῦμα τὸ ἅγιον, οὐκ ἔχει ἄφεσιν εἰς τὸν αἰῶνα, ἀλλὰ ἔνοχός ἐστιν αἰωνίου ἁμαρτήματος.
 - e.* καὶ ὁς ἂν σκανδαλίσῃ ἓνα τῶν μικρῶν τούτων τῶν πιστευόντων, καλὸν ἐστὶν αὐτῷ μᾶλλον εἰ περικείται μύλος ὀνίκος περὶ τὸν τράχηλον αὐτοῦ καὶ βέβληται εἰς τὴν θάλασσαν.
 - f.* τοῦτό ἐστιν τὸ αἷμά μου τῆς διαθήκης τὸ ἐκχυννόμενον ὑπὲρ πολλῶν· ἀμὴν λέγω ὑμῖν ὅτι οὐκέτι οὐ μὴ πίνω ἐκ τοῦ γενήματος τῆς ἀμπέλου ἕως τῆς ἡμέρας ἐκείνης ὅταν αὐτὸ πίνω καινὸν ἐν τῇ βασιλείᾳ τοῦ θεοῦ.

g. καὶ αὐτὸς προελεύσεται ἐνώπιον αὐτοῦ ἐν πνεύματι καὶ δυνάμει Ἡλεία, ἐπιστρέψαι καρδίας πατέρων ἐπὶ τέκνα καὶ ἀπειθεῖς ἐν φρονήσει δικαίων, ἐτοιμάσαι Κυρίῳ λαὸν κατεσκευασμένον.

h. κύριός ἐστιν τοῦ σαββάτου ὁ υἱὸς τοῦ ἀνθρώπου.

i. ἄφρονες, οὐχ ὁ ποιήσας τὸ ἔξωθεν καὶ τὸ ἔσωθεν ἐποίησεν; πλὴν τὰ ἐνόντα δότε ἐλεημοσύνην, καὶ ἰδοὺ πάντα καθαρά ὑμῖν ἐστίν.

j. ὁ νόμος καὶ οἱ προφῆται μέχρι Ἰωάννου ἀπὸ τότε ἡ βασιλεία τοῦ θεοῦ εὐαγγελίζεται καὶ πᾶς εἰς αὐτὴν βιάζεται. Εὐκοπώτερον δέ ἐστιν τὸν οὐρανὸν καὶ τὴν γῆν παρελθεῖν ἢ τοῦ νόμου μίαν κερέαν πεσεῖν.

k. λύσατε τὸν ναὸν τούτου καὶ [ἐν] τρισὶν ἡμέραις ἐγερῶ αὐτόν.

l. ὑμεῖς ἀνάβητε εἰς τὴν ἐορτὴν· ἐγὼ οὐκ ἀναβαίνω εἰς τὴν ἐορτὴν ταύτην, ὅτι ὁ ἐμὸς καιρὸς οὐκ ἔστι πεπλήρωται.

m. ἦν δὲ πρὸς καὶ αὐτοὶ οὐκ εἰσῆλθον εἰς τὸ πραιτώριον, ἵνα μὴ μιανθῶσιν ἀλλὰ φάγωσιν τὸ πάσχα.

9. Discuss the points of contact and difference in the λόγος of St John and the λόγος of Philo.

10. Trace the argument of St Stephen's speech. Examine the objection raised on account of want of distinctiveness in its style: and classify and account for the "discrepancies" in the speech.

11. Translate and annotate the following:

a. τοῦτον τῇ ὀρισμένῃ βουλῇ καὶ προγνώσει τοῦ θεοῦ ἔκδοτον διὰ χειρὸς ἀνόμων προσπῆξαντες ἀνείλατε, ὃν ὁ θεὸς ἀνέστησεν λύσας τὰς ὀδῖνας τοῦ θανάτου, καθότι οὐκ ἦν δυνατόν κρατεῖσθαι αὐτὸν ὑπ' αὐτοῦ.

b. μετανόησον οὖν ἀπὸ τῆς κακίας σου ταύτης, καὶ δεήθητι τοῦ κυρίου εἰ ἄρα ἀφεθήσεται σοι ἡ ἐπίνοια τῆς καρδίας σου. εἰς γὰρ χολὴν πικρίας καὶ σύνδεσμον ἀδικίας ὀρώ σε ὄντα.

c. ὥς καὶ ἐν τῷ ψαλμῷ γέγραπται τῷ δευτέρῳ Υἱὸς μου εἰ σύ, ἐγὼ σήμερον γεγέννηκά σε.

d. οἵτινες τῷ Παύλῳ ἔλεγον διὰ τοῦ πνεύματος μὴ ἐπιβαίνειν εἰς Ἱεροσόλυμα.

e. τότε ὁ Παῦλος παραλαβὼν τοὺς ἄνδρας τῇ ἐχομένῃ ἡμέρᾳ σὺν αὐτοῖς ἀγνισθεῖς εἰσῆλθαι εἰς τὸ ἱερόν, διαγγέλλων τὴν ἐκπλήρωσιν τῶν ἡμερῶν τοῦ ἀγνισμού ἕως οὗ προσηνέχθη ὑπὲρ ἐνὸς ἐκάστου αὐτῶν ἡ προσφορά.

12. a. Discuss fully the evidence for and against the readings of Luke ii. 14

ἐν ἀνθρώποις εὐδοκία.

... .. εὐδοκίας.

b. Correct the text of the following:

καὶ γὰρ κινδυνεύομεν ἐγκαλεῖσθαι στάσεως περὶ τῆς σήμερον. μηδενὸς αἰτίου ὑπάρχοντος περὶ οὗ δυνησόμεθα ἀποδοῦναι λόγον τῆς συστροφῆς ταύτης.
Acts xix. 40.

c. Give your reasons for preference of reading in the following:

i. τοῦ δὲ Ἰησοῦ Χριστοῦ ἡ γέννησις οὕτως ἦν.
τοῦ δὲ Χριστοῦ Ἰησοῦ ἡ γένεσις . . . Matt. i. 18.

ii. Σὺ πιστεύεις εἰς τὸν υἱὸν τοῦ θεοῦ.
... .. ἀνθρώπου.

John ix. 35.

13. Illustrate from the Gospels and Acts the use of τοῦ with the infinitive: of ἵνα with subjunctive: of the preposition εἰς.

14. Retranslate:

a. For then shall be great tribulation, such as was not since the beginning of the world to this time, no, nor ever shall be. And except those days should be shortened, there should no flesh be saved: but for the elect's sake those days shall be shortened.

b. For the earth bringeth forth fruit of herself; first the blade, then the ear, after that the full corn in the ear. But when the fruit is brought forth, immediately he putteth in the sickle, because the harvest is come.

c. When thou goest with thine adversary to the magistrate, as thou art in the way, give diligence that thou mayest be delivered from him; lest he hale thee to the judge, and the judge deliver thee to the officer, and the officer cast thee into prison.

d. So when they had dined, Jesus saith to Simon Peter, Simon, son of Jonas, lovest thou me more than these? He saith unto him, Yea, Lord; thou knowest that I love thee. He saith unto him, Feed my lambs. He saith to him again the second time, Simon, son of Jonas, lovest thou me? He saith unto him, Yea, Lord; thou knowest that I love thee. He saith unto him, Feed my sheep. He saith unto him the third time, Simon, son of Jonas, lovest thou me? Peter was grieved because he said unto him the third time, Lovest thou me? and he said unto him, Lord, thou knowest all things; thou knowest that I love thee. Jesus saith unto him, Feed my sheep.

e. But Peter said, Ananias, why hath Satan filled thine heart to lie to the Holy Ghost, and to keep back part of the price of the land? Whiles it remained, was it not thine own? and after it was sold, was it not in thine own power? why hast thou conceived this thing in thine heart? thou hast not lied unto men, but unto God.

15. Discuss the following words and phrases in the Gospels and Acts:

ἀντάλλαγμα—παράσημον—ἀπελεγμός—κατάλυμα—συντέλεια τοῦ αἰῶνος—ἐπιούσιος—δίκαιος—εὐλαβής—ἀγαθός—καλός—πραγματεύεσθαι—παραδειγματίζειν—σφραγίζειν—λικμᾶν—ἀλλεῖσθαι—ἀνασκευάζειν—κερδήσαι—προέλαβε μυρίσαι—ἄσοι ἂν ἤπτοντο—ῥῦσαι ἀπὸ τοῦ πονηροῦ.

THURSDAY, *November 13, 1884.* 1—4.

UNDERGRADUATES.

1. STATE fully the evidence for the Canonicity of
 - (a) The Epistle of St Jude.
 - (b) The Apocalypse.
2. Describe fully any Manuscript of the Pauline Epistles which is preserved in any of the Libraries in Cambridge.
3. How far may the title 'the Queen of Versions' be justly applied to the Peshito Syriac? State the main characteristics of other Syriac Versions.
4. Shew from St Paul's Epistles that he was acquainted with the technical terms of Greek Philosophy. Compare and contrast Christianity as preached by him with the Stoicism of Epictetus and Marcus Aurelius.
5. What foundation is there for the statement that the First Epistle of St Peter "in its language and tone occupies a place midway between the writings of St James and St Paul"?
6. Compare and contrast the language of the Apocalypse with that of other writings ascribed to St John. Account for the differences in style and imagery.
7. Translate with notes critical and explanatory:
 - (a) πάντες γὰρ ἡμαρτον καὶ ὑστεροῦνται τῆς δόξης τοῦ θεοῦ, δικαιούμενοι δωρεὰν τῇ αὐτοῦ χάριτι διὰ τῆς ἀπολυτρώσεως τῆς ἐν Χριστῷ Ἰησοῦ· ὃν προέθετο ὁ θεὸς ἱλαστήριον διὰ πίστεως ἐν τῷ αὐτοῦ αἵματι εἰς ἔνδειξιν τῆς δικαιοσύνης αὐτοῦ διὰ τὴν πάρεσιν τῶν προγεγονότων ἀμαρτημάτων ἐν τῇ ἀνοχῇ τοῦ θεοῦ, πρὸς τὴν ἔνδειξιν τῆς δικαιοσύνης αὐτοῦ ἐν τῷ νῦν καιρῷ, εἰς τὸ εἶναι αὐτὸν δίκαιον καὶ δικαιοῦντα τὸν ἐκ πίστεως Ἰησοῦ.
 - (b) ἀλλὰ ἐπωρώθη τὰ νοήματα αὐτῶν. ἄχρι γὰρ τῆς σήμερον ἡμέρας τὸ αὐτὸ κάλυμμα ἐπὶ τῇ ἀναγνώσει τῆς παλαιᾶς διαθήκης μένει μὴ ἀνακαλυπτόμενον, ὅτι ἐν Χριστῷ καταργεῖται, ἀλλ' ἕως σήμερον ἡνίκα ἂν ἀναγινώσκηται Μωσῆς κάλυμμα ἐπὶ τὴν καρδίαν αὐτῶν κεῖται· ἡνίκα δὲ εἰς ἐπιστρέψῃ πρὸς Κύριον, περιαιρεῖται τὸ κάλυμμα. ὁ δὲ κύριος τὸ πνεῦμά ἐστιν· οὐ δὲ τὸ πνεῦμα Κυρίου, ἐλευθερία. ἡμεῖς δὲ πάντες ἀνακεκαλυμμένφ προσώπφ τὴν δόξαν Κυρίου καταοπτρίζόμενοι τὴν αὐτὴν εἰκόνα μεταμορφούμεθα ἀπὸ δόξης εἰς δόξαν, καθάπερ ἀπὸ κυρίου πνεύματος.

(c) οὐ γὰρ προσεληλύθατε ψηλαφωμένῃ καὶ κεκαυμένῃ πυρὶ καὶ γνώφῃ καὶ ζόφῃ καὶ θυέλλῃ καὶ σάλπιγγος ἤχῃ καὶ φωνῇ ῥημάτων, ἧς οἱ ἀκούσαντες παρητήσαντο προστεθῆναι αὐτοῖς λόγον· οὐκ ἔφερον γὰρ τὸ διαστελλόμενον Κἀν θηρίον θίγῃ τοῦ ὄρους, λιθοβοληθήσεται· καί, οὕτω φοβερόν ἦν τὸ φανταζόμενον, Μωσῆς εἶπεν Ἐκφοβός εἰμι καὶ ἔντρομος.

(d) εἴ τις ἐν λόγῳ οὐ πταίει, οὗτος τέλειος ἄνθρωπος, δυνατὸς χαλιναγωγῆσαι καὶ ὅλον τὸ σῶμα. εἰ δὲ τῶν ἵππων τοὺς χαλινούς εἰς τὰ στόματα βάλλομεν εἰς τὸ πείθεσθαι αὐτοὺς ἡμῖν, καὶ ὅλον τὸ σῶμα αὐτῶν μετάγομεν. ἰδοὺ καὶ τὰ πλοῖα, τηλικαῦτα ὄντα καὶ ὑπὸ ἀνέμων σκληρῶν ἐλαυνόμενα, μετάγεται ὑπὸ ἐλαχίστου πηδαλίου ὅπου ἡ ὁρμὴ τοῦ εὐθύνοντος βούλεται· οὕτως καὶ ἡ γλῶσσα μικρὸν μέρος ἐστὶν καὶ μεγάλα αὐχεῖ. ἰδοὺ ἡλίκον πῦρ ἡλίκην ὕλην ἀνάπτει· καὶ ἡ γλῶσσα πῦρ, ὁ κόσμος τῆς ἀδικίας ἡ γλῶσσα καθίσταται ἐν τοῖς μέλεσιν ἡμῶν, ἡ σπιλοῦσα ὅλον τὸ σῶμα καὶ φλογίζουσα τὸν τροχὸν τῆς γενέσεως καὶ φλογιζομένη ὑπὸ τῆς γενέσεως.

(e) καὶ οἱ ἔμποροι τῆς γῆς κλαίουσιν καὶ πενθοῦσιν ἐπ' αὐτήν, ὅτι τὸν γόμον αὐτῶν οὐδεὶς ἀγοράζει οὐκέτι, γόμον χρυσοῦ καὶ ἀργύρου καὶ λίθου τιμίου καὶ μαργαριτῶν καὶ βυσσίνου καὶ πορφύρας καὶ σιρικοῦ καὶ κοκκίνου, καὶ πᾶν ξύλον θύνον καὶ πᾶν σκεῦος ἐλεφάντινον καὶ πᾶν σκεῦος ἐκ ξύλου τιμιωτάτου καὶ χαλκοῦ καὶ σιδήρου καὶ μαρμάρου, καὶ κινάμωμον καὶ ἄμωμον καὶ θυμιάματα καὶ μύρον καὶ λίβανον καὶ οἶνον καὶ ἔλαιον καὶ σεμίδαλιν καὶ σῖτον καὶ κτήνη καὶ πρόβατα, καὶ ἵππων καὶ ῥεδῶν καὶ σωμάτων, καὶ ψυχὰς ἀνθρώπων. καὶ ἡ ὁπώρα σου τῆς ἐπιθυμίας τῆς ψυχῆς ἀπῆλθεν ἀπὸ σοῦ, καὶ πάντα τὰ λιπαρὰ καὶ τὰ λαμπρὰ ἀπώλετο ἀπὸ σοῦ, καὶ οὐκέτι οὐ μὴ αὐτὰ εὐρήσουσιν.

8. Without translating, discuss any difficulties in the following passages:

(a) ἰδοὺ μυστήριον ὑμῖν λέγω· πάντες οὐ κοιμηθήσόμεθα πάντες δὲ ἀλλαγῆσόμεθα, ἐν ἀτόμῳ, ἐν ῥιπῇ ὀφθαλμοῦ, ἐν τῇ ἐσχάτῃ σάλπιγγι· σαλπίζει γὰρ, καὶ οἱ νεκροὶ ἐγερθήσονται ἄφθαρτοι, καὶ ἡμεῖς ἀλλαγῆσόμεθα.

(b) ἅτινά ἐστιν ἀλληγορούμενα· αὐταὶ γὰρ εἰσιν δύο διαθήκαι, μία μὲν ἀπὸ ὄρους Σινά, εἰς δουλείαν γεννώσα, ἥτις ἐστὶν Ἀγαρ, τὸ δὲ Ἀγαρ Σινὰ ὄρος ἐστὶν ἐν τῇ Ἀραβίᾳ, συνστοιχεῖ δὲ τῇ νῦν Ἱερουσαλὴμ, δουλεῖ γὰρ μετὰ τῶν τέκνων αὐτῆς.

(c) αὐτὸς γὰρ ἐστὶν ἡ εἰρήνη ἡμῶν, ὁ ποιήσας τὰ ἀμφότερα ἐν καὶ τὸ μεσότοιχον τοῦ φραγμοῦ λύσας, τὴν ἔχθραν ἐν τῇ σαρκὶ αὐτοῦ, τὸν νόμον τῶν ἐντολῶν ἐν δόγμασιν καταργήσας, ἵνα τοὺς δύο κτίσῃ ἐν αὐτῷ εἰς ἓνα καινὸν ἄνθρωπον ποιῶν εἰρήνην, καὶ ἀποκαταλλάξῃ τοὺς ἀμφοτέρους ἐν ἐνὶ σώματι τῷ θεῷ διὰ τοῦ σταυροῦ ἀποκτείνας τὴν ἔχθραν ἐν αὐτῷ.

(d) χαρισάμενος ἡμῖν πάντα τὰ παραπτώματα, ἐξαλείψας τὸ καθ' ἡμῶν χειρόγραφον τοῖς δόγμασιν ὃ ἦν ὑπεναντίον ἡμῖν, καὶ αὐτὸ ἤρκεν ἐκ τοῦ μέσου προσηλώσας αὐτὸ τῷ σταυρῷ· ἀπεκδυσάμενος τὰς ἀρχὰς καὶ τὰς ἐξουσίας ἐδειγμάτισεν ἐν παρρησίᾳ θριαμβεύσας αὐτοὺς ἐν αὐτῷ.

(e) μὴ γάρ τις ὑμῶν πασχέτω ὡς φορεὺς ἢ κλέπτης ἢ κακοποιὸς ἢ ὡς ἄλλοτριεπίσκοπος· εἰ δὲ ὡς Χριστιανός, μὴ αἰσχυνέσθω, δοξαζέτω δὲ τὸν θεὸν ἐν τῷ ὀνόματι τοῦτο. ὅτι [ὁ] καιρὸς τοῦ ἄρξασθαι τὸ κρίμα ἀπὸ τοῦ οἴκου τοῦ θεοῦ· εἰ δὲ πρῶτον ἀφ' ἡμῶν, τί τὸ τέλος τῶν ἀπειθούντων τῷ τοῦ θεοῦ εὐαγγελίῳ; καὶ εἰ ὁ δίκαιος μόλις σώζεται, ὁ [δὲ] ἀσεβὴς καὶ ἁμαρτωλὸς ποῦ φανείται; ὥστε καὶ οἱ πάσχοντες κατὰ τὸ θέλημα τοῦ θεοῦ πιστῷ ἐτίστη παρατιθέσθωσαν τὰς ψυχὰς ἐν ἀγαθοποιίᾳ.

9. Discuss the following words and expressions, illustrating by quotations their usage in the Epistles or Apocalypse, and carefully distinguishing between those which are apparently synonymous:

ἀκέραιος—εἰλικρινής—παλιγγενεσία—ἀνακαίνωσις—λαὸς περιούσιος—λαὸς εἰς περιποίησιν—μορφή—σχῆμα—καπηλεύειν—δολοῦν—ψυχικός—σαρκικός—σάρκινος—κοσμικός—χάραγμα—χαρακτήρ—πρόθεσις—προθεσμία.

10. Retranslate the following passages:

(a) Be not conformed to this world: but be ye transformed by the renewing of your mind, that ye may prove what is that good, and acceptable, and perfect, will of God.

(b) Finally, my brethren, be strong in the Lord, and in the power of his might. Put on the whole armour of God, that ye may be able to stand against the wiles of the devil.

(c) The foundation of God standeth sure, having this seal, The Lord knoweth them that are his. And, Let every one that nameth the name of Christ depart from iniquity.

(d) Now faith is the substance of things hoped for, the evidence of things not seen.

(e) We know that whosoever is born of God sinneth not; but he that is begotten of God keepeth himself, and that wicked one toucheth him not. And we know that we are of God, and the whole world lieth in wickedness.

11. Explain the following notes, stating the approximate date of the Codices, Versions and Fathers mentioned in them:

(a) *καυχῆσθωμαι*] *καυθήσομαι* (-σωμαι) Western and Syrian (Gr. Lat. Syr. [Æth.] Arm. Goth.); incl. C Greek and Latin MSS known to Hier Meth Cyr.al⁴ Tert Cyp Aphr Ephr. Text NAB Greek MSS known to Hier 17 me the (aeth. codd) go.gm (? Clem.rom) (Clem.al) Orig.loc. Hier.Gal.499, 517 f.; Is.688.

(b) *συνεργει* sine additam cum MCDGKLP al omn^{vid} vg syr^{utr} cop arm Clem⁸⁰⁴ Or^{4,827}. ⁴⁰⁰not ⁴⁰⁰not bis et^{int⁴,502} Eus²²⁸ Cyr^{hr} Chr⁸⁵⁵. ⁸⁵⁶ bis Cyr^{cat} 147 Thdr^t Dam al Lcif¹⁷⁰ Aug^{ep} 140 ac⁸⁰⁰ al mu ... In add o θεος cum AB, item Or^{2,500} *επει τοις αγ. τ. θε. παντ. συνεργει εισ αγ. ο θεος et^{1,804} ο θεος, ο τοις αγ. αυτον παντα συνεργων εισ αγαθ.* (aeth *quod adiuvet eos dominus eos qui amant eum in omni bono*).

CROSSE SCHOLARSHIP.

WEDNESDAY, November 26, 1884. 9—12.

(A)

I. TRANSLATE Joshua, ch. xxii. 9—12.

- v. 9. Parse נֶאֱחָזוּן. Account for the peculiar form of the word.
- v. 11. Illustrate the meaning and use of אֵל מֶלֶךְ by examples from other passages of Scripture.

II. Translate 2 Samuel, ch. xv. 1—9.

- v. 7. אַרְבַּעִים שָׁנָה. What is the correct reading? and by what authority is it supported?
- v. 8. Since neither the *kethibh* יָשִׁיב, nor the *lxx* יָשׁוּב, is satisfactory, emend the text by conjecture. LXX. ἐὰν ἐπιστρέψω ἐπιστρέψῃ με κύριος κ.τ.λ.

III. Translate Isaiah, ch. xxviii. 14—22.

- v. 15. Point the *kethibh* שִׁיט and כִּי עֵבֶר. Which are the better readings, these, or the *lxx* שִׁט and כִּי יַעֲבֵר?
- v. 16. What correction has been suggested in regard to the punctuation of יִסָּד?—Explain the form and construction of each word in the clause פִּנֹּת יִקְרָת מוֹסֵד מוֹסֵד.—For יִחִישׁ it has been proposed to read יִמִּישׁ. What have you to say for or against this emendation?
- v. 17. Cheyne remarks that a word has fallen out of the text after וְסֹתֵר. Discuss this point.
- v. 18. It is proposed to read וְתִפֹּר בְּרִיתְכֶם. On what grounds? Give your view on the matter.
- v. 19. Analyse מִרִּי.
- v. 21. Why are דֹּר פְּרִצִים and גִּבְעוֹן singled out for mention by the Prophet?

IV. (a) Show that Psalms xlii and xliii really form but one psalm. Correct the text of Ps. xlii. 6, 7.

(b) Translate Psalm xxv. 17. It is proposed to read דַּרְחִיב וּמִמְצוּקוֹתֵי. Translate the verse according to this emendation, and state the reasons for its being proposed.

(B)

1. GIVE some account of the Massoretic Text of the Old Testament, with reasons for the date which you assign to its completion. What purposes are served by the קרי in the marginal notes? Give Biblical evidence of the prior existence of an unpunctuated Hebrew text. What are the principal aids to textual criticism of the Hebrew Bible?

2. Which are the books contained in the third division of our Hebrew Bibles (Kethubim)? Give probable reasons why each of them is placed in that division.

3. Give internal evidence from the Septuagint version that it is not all the work of the same translators. Shew by examples the value of this Version to (1) the student of the Old Testament, and (2) the student of the New Testament.

4. Distinguish between the following sets of synonymous words:

פסל, זלם, מצודה-מועד, דג-כפר, פרה, נאל-קרא, ענה, דבר, אמר,
נבל, כסיל, אייל-עולל, נער, בן, ילד-מסכה

5. Compare the separate stages of the Mosaic code in respect to

(1) the Feasts which are commanded,

(2) the laws concerning purification, and clean and unclean meats.

6. Explain the symbolical character of the Old Testament sacrifices so as to make clear what is meant in the Epistle to the Hebrews when Abraham is said to have received Isaac from the dead 'in a figure'.

7. Describe very briefly the character of the labours of (1) Samuel, (2) Elijah, (3) Ezra. How are they severally represented in the Apocryphal writings of the Old Testament?

8. Shew by examples of Old Testament prophecies quoted in the New what is meant by *primary* and *secondary* senses of prophecy, and point out how they are related to each other.

9. What linguistic peculiarities have been noticed in the book of Jonah? How is this prophet spoken of in the historical books of the Old Testament, and how do the narrative parts of the book of Jonah accord with the date thus assigned to him?

10. Define the several answers given, in the book of Job, to the solemn question which is there discussed. How does the nature of the subject bear upon the date of the composition? Are there any indications that the author endeavoured to give his work an archaic form?

11. Shew from the Psalms of the Captivity and other writings of that time and afterwards what effect the Captivity had wrought on the religious feelings of the Jewish people.

12. Give an account of the different sections of the book of Proverbs. How does the composite character of this book illustrate the literary history of the Israelites, and what weight would you give to its evidence in discussing the composition of other Old Testament Books?

WEDNESDAY, November 26, 1884. 1—4.

CHURCH HISTORY.

1. GIVE some account of each of the extant Christian writings probably belonging to the reigns of M. Aurelius and Commodus.

Mention the names of any lost Christian books belonging to this period.

2. Describe and account for the changes of imperial policy towards the Church from the reign of Septimius Severus to that of Aurelian, both inclusive.

3. Write a short account, with approximate dates, of the synods known to have been held in Ante-Nicene times. What evidence exists as to the qualifications required for taking part in them?

4. Write a short biography of Eusebius of Caesarea, giving an account of his chief works.
5. Sketch the ecclesiastical history of the city of Constantinople from its foundation to the death of Theodosius I.
6. Give an outline of the political history of Arianism in Europe till its extinction.
7. Describe the characteristics of the Irish Church down to the time of the English conquest.
8. Enumerate the chief incidents in the alliance of Pepin's family with the see of Rome and explain its importance in subsequent history.
9. Compare the religious condition of Italy as attested by Dante's writings with that of any other country of Europe at the same time.
10. Explain the causes of the rise of the Conciliar movement of the fifteenth century, and of its collapse.
11. Distinguish the leading influences of Continental on English theology in the reigns of Elizabeth, James I, and Charles I.
12. Point out the chief effects of the Thirty Years' War on the religious and the ecclesiastical condition of Germany.
13. What are the chief original sources of information respecting Justinian, St Louis, and Wycliffe and his times?
14. Describe the contents of the Apostolic Constitutions, the *Libri Carolini*, and the *Epistolae obscurorum virorum*.

THURSDAY, Nov. 27, 1884. 9—12.

I. 1. QUOTE as fully as you can the authoritative declarations of the Roman and English Churches on the authority and contents of Holy Scripture.

2. And he that saw it bare record, and his record is true: and he knoweth that he saith true, that ye might believe. (John xix. 35).

Examine the bearing of these words on the authorship of the Fourth Gospel.

3. Give the substance of Eusebius' remarks on the 'Antilegomena' of the New Testament.

II. 1. Set down in a brief tabular form the separate incidents of the great Forty Days which are recorded in the different books of the New Testament.

2. Examine the use of the following words in the New Testament: *ἀπόστολος*, *ἐπίσκοπος*, *διάκονος*, *προφήτης*.

III. Give the original contexts of the following quotations, with any remarks which seem to be required as to the use which is made of them in the apostolic writings:

1. αὐτὸς τὰς ἀσθενείας ἡμῶν ἔλαβεν καὶ τὰς νόσους ἐβάστασεν.
2. τὴν ἐπισκοπὴν αὐτοῦ λάβοι ἕτερος.
3. ὁ δὲ δίκαιός μου ἐκ πίστεως ζήσεται.
4. ἰδοὺ ἐγὼ καὶ τὰ παῖδιά αὐτοῦ μοι ἔδωκεν ὁ θεός.

IV. Mention the various readings which are found in the following passages, and discuss in detail any two of them:

τοῦ δὲ Ἰησοῦ Χριστοῦ ἡ γέννησις οὕτως ἦν.

δόξα ἐν ὑψίστοις θεῷ καὶ ἐπὶ γῆς εἰρήνη ἐν ἀνθρώποις εὐδοκία.

ἡμεῖς πεπιστεύκαμεν καὶ ἐγνώκαμεν ὅτι σὺ εἶ ὁ χριστὸς ὁ υἱὸς τοῦ θεοῦ τοῦ ζῶντος.

ποιμαίνειν τὴν ἐκκλησίαν τοῦ θεοῦ ἣν περιποιήσατο διὰ τοῦ ἰδίου αἵματος.

ὅπως χάριτι θεοῦ ὑπὲρ παντὸς γεύσῃται θανάτου.

ὁ γεννηθεὶς ἐκ τοῦ θεοῦ τηρεῖ ἑαυτὸν καὶ ὁ πονηρὸς οὐχ ἄπτεται αὐτοῦ.

μακάριοι οἱ ποιούντες τὰς ἐντολὰς αὐτοῦ.

V. Translate the following passages with brief notes:

ὁ δὲ Ἰησοῦς εἶπεν αὐτῷ Ἑταῖρε, ἐφ' ὃ πάρει. τότε προσελθόντες ἐπέβαλον τὰς χεῖρας ἐπὶ τὸν Ἰησοῦν καὶ ἐκράτησαν αὐτόν.

οὐκ οἶδατε τὴν παραβολὴν ταύτην, καὶ πῶς πάσας τὰς παραβολὰς γνώσεσθε;

εἶπεν δὲ πρὸς αὐτούς Ὁράτε καὶ φυλάσσεσθε ἀπὸ πάσης πλεονεξίας, ὅτι οὐκ ἐν τῷ περισσεύειν τινὶ ἡ ζωὴ αὐτοῦ ἐστὶν ἐκ τῶν ὑπαρχόντων αὐτῷ.

ἀμὴν ἀμὴν λέγω ὑμῖν ὅτι ὁ τὸν λόγον μου ἀκούων καὶ πιστεύων τῷ πέμψαντί με ἔχει ζωὴν αἰώνιον, καὶ εἰς κρίσιν οὐκ ἔρχεται ἀλλὰ μεταβέβηκεν ἐκ τοῦ θανάτου εἰς τὴν ζωὴν.

ὁ δὲ Ἀγρίππας πρὸς τὸν Παῦλον Ἐν ὀλίγῳ με πείθεις Χριστιανὸν ποιῆσαι.

τῇ γὰρ ματαιότητι ἡ κτίσις ὑπετάγη, οὐχ ἐκούσα ἀλλὰ διὰ τὸν ὑποτάξαντα, ἐφ' ἐλπίδι ὅτι καὶ αὐτὴ ἡ κτίσις ἐλευθερωθήσεται ἀπὸ τῆς δουλείας τῆς φθορᾶς εἰς τὴν ἐλευθερίαν τῆς δόξης τῶν τέκνων τοῦ θεοῦ.

πάντες γὰρ υἱοὶ θεοῦ ἐστέ διὰ τῆς πίστεως ἐν Χριστῷ Ἰησοῦ. ὅσοι γὰρ εἰς Χριστὸν ἐβαπτίσθητε, Χριστὸν ἐνεδύσασθε.

εἰάν τις ἴδῃ τὸν ἀδελφὸν αὐτοῦ ἁμαρτάνοντα ἁμαρτίαν μὴ πρὸς θάνατον, αἰτήσῃ. καὶ δώσῃ αὐτῷ ζωὴν, τοῖς ἁμαρτάνουσιν μὴ πρὸς θάνατον. ἔστιν ἁμαρτία πρὸς θάνατον· οὐ περὶ ἐκείνης λέγω ἵνα ἐρωτήσῃ.

ὁ ἀδικῶν ἀδικησάτω ἔτι, καὶ ὁ ῥυπαρὸς ῥυπανθήτω ἔτι, καὶ ὁ δίκαιος δικαιοσύνην ποιησάτω ἔτι, καὶ ὁ ἅγιος ἁγιασθήτω ἔτι.

VI. Give the original of the following with any corrections of the rendering which appear to be required:

Then said he unto them, Therefore every scribe which is instructed unto the kingdom of heaven is like unto a man that is an householder, which bringeth forth out of his treasure things new and old.

She hath done what she could: she is come aforehand to anoint my body to the burying.

Repent ye therefore, and be converted, that your sins may be blotted out, when the times of refreshing shall come from the presence of the Lord.

For the invisible things of him from the creation of the world are clearly seen, being understood by the things that are made, even his eternal power and Godhead; so that they are without excuse.

For now we see through a glass, darkly; but then face to face: now I know in part; but then shall I know even as also I am known.

And be ye kind one to another, tenderhearted, forgiving one another, even as God for Christ's sake hath forgiven you.

For therefore we both labour and suffer reproach, because we trust in the living God, who is the Saviour of all men, specially of those that believe.

Let us therefore come boldly unto the throne of grace, that we may obtain mercy, and find grace to help in time of need.

VII. 1. Discuss the use of the following words: *δικαίωμα, ἐνεργεῖν, ἰλάσκεσθαι, καταλλάσσειν, πιστεύειν, σῶζειν.*

2. Illustrate the differences of ἅγιος, ἄγνός, καθαρός—λειτουργεῖν, λατρεύειν—ληστής, κλέπτης—νέος, καινός—υἱός, τέκνον.

3. Examine the use of ἵνα, ὥστε, εἰς τό and τοῦ (with infin.) in final clauses.

VIII. State shortly the external and internal evidence as to the original language of the Epistle to the Hebrews.

THURSDAY, November 27, 1884. 1—4.

1. TRANSLATE and illustrate the following:

At enim viva et germana divinitas nec de novitate nec de vetustate, sed de sua veritate censetur. non habet tempus aeternitas. omne enim tempus ipsa est. quod facit, pati non potest. caret aetate quod non licet nasci. Deus si est vetus, non erit; si est novus, non fuit. novitas initium testificatur: vetustas finem comminatur. Deus autem tam alienus ab initio et fine est quam a tempore, arbitro et metatore initii et finis.

TERTULL. *adv. Marcionem*, I. viii.

Give any explanations of the oath of the angel (Rev. x. 6) ὅτι χρόνος οὐκέτι ἔσται.

2. (α) Εἰς θεός ἐστιν, ὁ φανερώσας ἑαυτὸν διὰ Ἰησοῦ Χριστοῦ τοῦ υἱοῦ αὐτοῦ, ὃς ἐστὶν αὐτοῦ λόγος αἰδῖος, οὐκ ἀπὸ συγῆς προελθών...

(β) Εἰς θεός ἐστιν ὁ παντοκράτωρ, ὁ φανερώσας ἑαυτὸν διὰ Ἰησοῦ Χριστοῦ, τοῦ υἱοῦ αὐτοῦ, ὃς ἐστὶν αὐτοῦ λόγος, οὐ ῥητὸς ἀλλ' οὐσιώδης· οὐ γάρ ἐστι λαλίας ἐνάρθρου φώνημα ἀλλ' ἐνεργείας θεϊκῆς οὐσία γεννητή...

Translate and determine as exactly as you can from the dogmatic references in these quotations the dates to which their composition must be assigned.

3. (α) Discuss the opinion condemned in the following sentence:

Εἰ τις τὴν οὐσίαν τοῦ θεοῦ πλατύνεσθαι ἢ συστέλλεσθαι φάσκει, ἀνάθεμα ἔστω.

(β) Translate and criticise:

Διωκόμεθα ὅτι εἵπαμεν, ἀρχὴν ἔχει ὁ υἱός, ὁ δὲ θεὸς ἀναρχός ἐστι. διὰ τοῦτο διωκόμεθα καὶ ὅτι εἵπαμεν ὅτι ἐξ οὐκ ὄντων ἐστίν. οὕτως δὲ εἵπαμεν καθότι οὐδὲ μέρος θεοῦ οὐδὲ ἐξ ὑποκειμένου τινός.

(γ) Explain in detail:

"In proportion as the influence of Apollinarianism pervaded, however indirectly, the theology of the Church, men lost their hold on the truth of the perfect human sympathy of Christ, and they turned more and more to one in whom they hoped to find it."

4. Give some account of the controversies in regard to the Holy Spirit in the third century, and of the probable history of the words referring to Him, in the Creed of Constantinople. How do you understand the passage τὸ σὺν πατρὶ καὶ υἱῷ συνπροσκυνούμενον καὶ συνδοξαζόμενον?

5. Translate and comment on the following from Epiphanius' argument with the 'Melchisedeciani':

ἔμεινεν αὐτὸς [ὁ Μελχισεδέκ] ἱερεὺς τὸν πάντα χρόνον τῆς αὐτοῦ ζωῆς οὕτω καὶ ὁ κύριος ἡμῶν οὐκ ὦν ἄνθρωπος ἀλλὰ ἐκ θεοῦ ἅγιος θεὸς λόγος, υἱὸς θεοῦ γεννηθεὶς ἀνάρχως καὶ ἀχρόνως, αἰεὶ σὺν πατρὶ ὦν, γενόμενος δι' ἡμᾶς ἐκ Μαρίας ἄνθρωπος οὐκ ἀπὸ σπέρματος ἀνδρός. τὴν δὲ ἱερωσύνην τῷ πατρὶ προσφέρει, ἐξ ἀνθρωπότητος τὸ φύραμα λαβὼν, ἵνα ὑπὲρ ἡμῶν ἱερεὺς καταστή κατὰ τὴν τάξιν Μελχισεδέκ τὴν μὴ ἔχουσιν διαδοχὴν. μένει γὰρ τὰ ὑπὲρ ἡμῶν εἰς τὸ διηνεκὲς δῶρα προσφέρον, πρῶτον μὲν ἑαυτὸν προσενέγκας, ἵνα λύσῃ θυσίαν παλαιᾶς διαθήκης, τὴν ἐντελεστέραν ζώσαν ὑπὲρ παντὸς κόσμου ἱεουργήσας· αὐτὸς ἱερεῖον, αὐτὸς θῦμα, αὐτὸς ἱερεὺς, αὐτὸς θυσιαστήριον, αὐτὸς θεός, αὐτὸς ἄνθρωπος, αὐτὸς βασιλεύς, αὐτὸς ἀρχιερεὺς, αὐτὸς πρόβατον, αὐτὸς ἄρνιον, τὰ πάντα ἐν πᾶσιν ὑπὲρ ἡμῶν γενόμενος, ἵνα ἡμῖν ζωὴ κατὰ πάντα τρόπον γένηται καὶ τῆς ἱερωσύνης αὐτοῦ τὸ ἀμετάστατον ἐδραίωμα εἰς τοὺς αἰῶνας ἀπεργάσῃται.

6. What were the errors of the Paulicians, the Albigenses, the Cathari?

7. Give the leading characteristics of the Anabaptists of the Reformation era.

8. Give illustrations from early writers of the following passage from the Διδαχὴ τῶν ἀποστόλων:

Περὶ δὲ τῆς εὐχαριστίας, οὕτως εὐχαριστήσατε. Πρῶτον περὶ τοῦ ποτηρίου· Εὐχαριστοῦμέν σοι, Πάτερ ἡμῶν, ὑπὲρ τῆς ἁγίας ἀμπέλου Δαβὶδ τοῦ παιδός σου, ἧς ἐγνώρισας ἡμῖν διὰ Ἰησοῦ τοῦ παιδός σου· σοὶ ἡ δόξα εἰς τοὺς αἰῶνας.

Περὶ δὲ τοῦ κλάσματος· Εὐχαριστοῦμέν σοι, Πάτερ ἡμῶν, ὑπὲρ τῆς ζωῆς καὶ γνώσεως ἧς ἐγνώρισας ἡμῖν διὰ Ἰησοῦ τοῦ παιδός σου· σοὶ ἡ δόξα εἰς τοὺς αἰῶνας. Ὡς περ ἦν τοῦτο κλάσμα διεσκορπισμένον ἐπάνω τῶν ὁρέων καὶ συναχθὲν ἐγένετο ἐν, οὕτω συναχθήτω σου ἡ ἐκκλησία ἀπὸ τῶν περάτων τῆς γῆς εἰς τὴν σὴν βασιλείαν· ὅτι σοῦ ἐστὶν ἡ δόξα καὶ ἡ δύναμις διὰ Ἰησοῦ Χριστοῦ εἰς τοὺς αἰῶνας.

9. Give also some account of the earliest known Christian hymns.

10. In the Te Deum the words occur "Heaven and earth are full of the majesty of thy glory," as belonging to the Seraphic hymn. Exhibit the wide diffusion of this addition to the words found in Isaiah. Mention some of the various positions in the Eucharistic services at which the ἅγιος, ἄγιος, ἄγιος or its translations are found.

Connect other portions of the *Te Deum* with early documents.

JEREMIE PRIZES.

FRIDAY, December 5, 1884. 9—12.

A.

JUDGES.

I. GIVE a list of words the translation of which in the book of Judges does not accord with that in other books of the Septuagint. Also shew from the spelling of proper names in this book the way in which the consonants of the Hebrew alphabet have been represented in Greek.

II. Translate with notes to explain the variations from the Massoretic text or the peculiarities of the Greek.

ἀπεκαλύφθη ἀποκάλυμμα ἐν Ἰσραὴλ ἐν τῷ ἐκουσιασθῆναι λαὸν, εὐλογεῖτε Κύριον. ἀκούσατε βασιλεῖς, καὶ ἐνωτίσασθε σατράπαι· ἄσομαι ἐγὼ εἰμι τῷ Κυρίῳ ἐγὼ εἰμι ψαλῶ τῷ Κυρίῳ τῷ Θεῷ Ἰσραὴλ. Κύριε, ἐν τῇ ἐξόδῳ σου ἐν Σηεῖρ, ἐν τῷ ἀπαίρειν σε ἐξ ἀγροῦ Ἐδὼμ, γῇ ἐσεισθη, καὶ ὁ οὐρανὸς ἔσταξε δρόσους, καὶ αἱ νεφέλαι ἔσταξαν ὕδωρ. ᾤρη ἐσαλεύθησαν ἀπὸ προσώπου Κυρίου Ἐλωῖ, τοῦτο Σινὰ ἀπὸ προσώπου Κυρίου Θεοῦ Ἰσραὴλ. ἐν ἡμέραις Σαμεγὼρ υἱοῦ Ἀνάθ, ἐν ἡμέραις Ἰαήλ, ἐξέλιπον ὁδοὺς, καὶ ἐπορεύθησαν ἀτραποὺς, ἐπορεύθησαν ὁδοὺς διεστραμμένας. ἐξέλιπον δυνατοὶ ἐν Ἰσραὴλ, ἐξέλιπον ἕως οὐ ἀνέστη Δεββώρα, ἕως οὐ ἀνέστη μήτηρ ἐν Ἰσραὴλ. ἐξελέξαντο θεοὺς καινοὺς, τότε ἐπολέμησαν πόλεις ἀρχόντων· θυρεὸς ἐὰν ὀφθῇ καὶ λόγχη ἐν τεσσαράκοντα χιλιάσιν ἐν Ἰσραὴλ, ἡ καρδιά μου εἰς τὰ διαταγμένα τῷ Ἰσραὴλ· οἱ ἐκουσιαζόμενοι ἐν λαῷ εὐλογεῖτε Κύριον.

III. Comment on the following sentences:

- (1) δώσεις μοι λύτρωσιν ὕδατος.
- (2) καὶ ἐκάλεσε τὸ ὄνομα τῆς πόλεως Ἀνάθεμα.
- (3) καὶ αὐτὸς ἐξεστῶς ἐσκοτώθη καὶ ἀπέθανε.
- (4) ἐν ἐμοὶ Κύριέ μου ἐν τίνι σώσω τὸν Ἰσραὴλ;
- (5) ὅτι θεοῦ ἁγίου ἔσται τὸ παιδάριον.

IV. Write brief notes on the following words or phrases:

προνομεῖν, ἀστείος, διγομία, μαγίς, εἰς ὁμοίωμα υἱοῦ βασιλέως, τί ποιήσωμεν τῷ παιδίῳ τῷ τικτομένῳ; τρυμαλία, ἐπισκεπηναί.

V. Translate with notes:

καὶ εὗρε σιαγὸνα ὄνου ἐξερριμμένην, καὶ ἐξέτεινε τὴν χεῖρα αὐτοῦ καὶ ἔλαβεν αὐτήν, καὶ ἐπάταξεν ἐν αὐτῇ χιλίους ἄνδρας. καὶ εἶπε Σαμψὼν, Ἐν σιαγόνι ὄνου ἐξαλείφω ἐξήλειψα αὐτοὺς, ὅτι ἐν τῇ σιαγόνι τοῦ ὄνου ἐπάταξα χιλίους ἄνδρας. καὶ ἐγένετο ὥς ἐπαύσατο λαλῶν, καὶ ἔρριψε τὴν σιαγὸνα ἐκ τῆς χειρὸς αὐτοῦ· καὶ ἐκάλεσε τὸν τόπον ἐκεῖνον, Ἀναίρεσις σιαγόνος. καὶ ἐδίψησε σφόδρα, καὶ ἔκλαυσε πρὸς Κύριον,

καὶ εἶπε, Σὺ εὐδόκησας ἐν χειρὶ δούλου σου τὴν σωτηρίαν τὴν μεγάλην ταύτην, καὶ νῦν ἀποθανοῦμαι τῷ δίκῃ, καὶ ἐμπεσοῦμαι ἐν χειρὶ τῶν ἀπεριτμητῶν; καὶ ἔρρηξεν ὁ Θεὸς τὸν λάκκον τὸν ἐν τῇ σιαγόνι, καὶ ἐξῆλθεν ἐξ αὐτοῦ ὕδωρ, καὶ ἔπιε· καὶ ἐπέστρεψε τὸ πνεῦμα αὐτοῦ καὶ ἔζησε διὰ τοῦτο ἐκλήθη τὸ ὄνομα αὐτῆς, Πηγή τοῦ ἐπικαλουμένου, ἥ ἐστὶν ἐν σιαγόνι, ἕως τῆς ἡμέρας ταύτης. καὶ ἔκρινε τὸν Ἰσραὴλ ἐν ἡμέραις ἀλλοφύλων εἴκοσι ἔτη.

VI. Give as long a list as you can of additions in this book to the narrative as contained in the Hebrew, and point out the reason, and, where possible, the source of these additions.

VII. Give the LXX rendering of:

The trees went forth *on a time* to anoint a king over them; and they said unto the olive tree, Reign thou over us. But the olive tree said unto them, Should I leave my fatness, wherewith by me they honour God and man, and go to be promoted over the trees?

and point out and explain the singular variation which occurs in it from the Hebrew as represented by the Authorized Version.

B.

MICAH. PSALMS, BOOKS III AND IV.

1. WHAT MSS. of the Minor Prophets are assigned by Dr Field to the recension of Lucian? Describe the evidence by which readings have been identified as belonging to this recension, and the characteristics which they most frequently exhibit.

2. Illustrate from Micah and this part of the Psalter the prevailing peculiarities of each of the chief later Greek versions of the Old Testament, and their respective relations to the Septuagint.

3. Compare the LXX rendering of Micah iv. 1—3 (καὶ ἔσται ἐπ' ἐσχάτων τῶν ἡμερῶν ἐμφανὲς τὸ ὄρος τοῦ κυρίου κ.τ.λ.) with that of Isaiah ii. 2—4, and examine the question whether they come from the same translator.

4. Write down what you can remember of the LXX rendering of the following passage:—

Wherewith shall I come before the Lord, and bow myself before the high God? Shall I come before him with burnt offerings, with calves of a year old? * * * Shall I give my firstborn for my transgression, the fruit of my body for the sin of my soul? He hath shewed thee, o man, what is good; and what doth the Lord require of thee but to do justly, and to love mercy, and to walk humbly with thy God?

5. Translate with notes, explaining the variations from the Hebrew,—

(1) κατασπάσω εἰς χάος τοὺς λίθους αὐτῆς.

(2) θρηνηθήσεται θρήνος ἐν μέλει λέγων Ταλαιπωρία ἐταλαιπωρήσαμεν.

(3) ἡγούμενοι λαοῦ μου ἀποριφῆσονται ἐκ τῶν οἰκιῶν τρυφῆς αὐτῶν, διὰ τὰ πονηρὰ ἐπιτηδεύματα αὐτῶν ἐξώσθησαν ἐγγίσατε ὁρεσιν αἰώνιους.

- (4) ἄκουε, φυλή, καὶ τίς κοσμήσει πόλιν;
- (5) ἐγενήθη ὡς συνάγων καλάμην ἐν ἀμήτῳ καὶ ὡς ἐπιφυλλίδα ἐν τρυγητῷ.
- (6) ὑπερβαίνων ἀσεβείας τοῖς καταλοιποῖς τῆς κληρονομίας αὐτοῦ.

6. (1) Explain the origin of the following text:—

σὺ πῖσεις...οἶνον καὶ οὐ μὴ πῖνῃς, καὶ ἀφανισθήσεται νόμιμα λαοῦ μου. καὶ ἐφύλαξας τὰ δικαιώματα Ζαμβρεὶ καὶ πάντα τὰ ἔργα οἴκου Ἀχαάβ.

(2) Translate the following verse, and give and translate its chief various readings, explaining their origin:—

καὶ αἱ πόλεις σου ἤξουσιν εἰς ὁμαλισμὸν καὶ εἰς διαμερισμὸν Ἀσσυρίων, καὶ αἱ πόλεις σου αἱ ὀχυραὶ εἰς διαμερισμὸν ἀπὸ Τύρου ἕως τοῦ ποταμοῦ, καὶ ἀπὸ θαλάσσης ἕως θαλάσσης, καὶ ἀπὸ ὄρους ἕως τοῦ ὄρους.

(3) Account for the following readings, and explain their relation to each other:—(the preceding words are τὰ κέρατά σου θήσομαι σιδηρὰ καὶ τὰς ὀπλάς σου θήσομαι χαλκᾶς)

καὶ καταπατήσεις ἐν αὐταῖς ἔθνη καὶ λεπτινεῖς λαοὺς πολλοὺς 22 and 3 other cursives.

καὶ κατατήξεις ἐν αὐτοῖς ἔθνη καὶ λεπτινεῖς λαοὺς πολλοὺς V 9 cursives, Thdt.

καὶ λεπτινεῖς λαοὺς πολλοὺς A Q 106 and 6 other cursives Cyr.

καὶ κατατήξεις λαοὺς πολλοὺς B and apparently a few cursives.

7. Translate:

Ἄλλ' ὅτι τὰ ἔθνη μετανοεῖν ἀπὸ τῆς κακίας ἐν ᾗ πλανώμενοι ἐπολιτεύοντο, ἀκούσαντα τὸν ὑπὸ τῶν ἀποστόλων αὐτοῦ ἀπὸ Ἱερουσαλὴμ κηρυχθέντα καὶ δι' αὐτῶν μαθόντα λόγον, καὶ λόγους βραχεῖς λέγοντός μου ἀπὸ προφητείας Μιχαίου ἐνὸς τῶν δώδεκα ἀνάσχεσθε. * * * Καὶ τελέσας ταῦτα ἐπεῖπον Καὶ ὅτι οἱ διδάσκαλοι ὑμῶν, ὦ ἄνδρες, τοὺς πάντας λόγους τῆς περικοπῆς ταύτης εἰς τὸν χριστὸν ὁμολογοῦσιν εἰρῆσθαι ἐπίσταμαι· καὶ αὐτὸν ὅτι οὐδέπω φασὶν ἐληλυθέναι, καὶ τοῦτο γινώσκω· εἰ δὲ καὶ ἐλήλυθεν, λέγουσιν, οὐ γινώσκεται ὅς ἐστιν, ἀλλ' ὅταν ἐμφανῆς καὶ ἐνδοξος γένηται, τότε γνωσθήσεται ὅς ἐστι, φασίν.

JUSTINUS.

8. Translate the following sentences, explaining any differences which they may contain from the Massoretic text:—

- (1) μὴ παραδῶς τοῖς θηρίοις ψυχὴν ἐξομολογουμένην σοι.
- (2) φωτίζεις σὺ θαυμαστῶς ἀπ' ὀρέων αἰωνίων.
- (3) ὁ αἰὼν ἡμῶν εἰς φωτισμὸν τοῦ προσώπου σου.
- (4) δεῦτε καταπαύσωμεν τὰς ἐορτὰς Κυρίου ἀπὸ τῆς γῆς.
- (5) ἐπληρώθη ἡ γῆ τῆς κτίσεώς σου.

9. (1) Quote in Greek any phrases of Psalm 88 (89 Heb., *My song shall be always of the loving kindness of the Lord*) which receive a Messianic application in the New Testament, mentioning in what contexts they are so applied.

(2) What are the different LXX renderings of *Sabaoth*, and in what books are they respectively found?

10. Translate the following comment of Eusebius, accounting for the various renderings mentioned, and also for those that are glanced at in the first sentence:—

τίσι δὲ τούτοις δώσει τὰς εὐλογίας ἡ δηλονότι τοῖς ἐν τῇ κοιλάδι ταύτῃ ἀποκλαομένοις καὶ πῆγην ἐν αὐτῇ θεμένοις; Ἀντὶ δὲ τοῦ ὁ νομοθετῶν ὁ μὲν Ἀκύλας πρῶϊμος ὠνόμασεν, ὁ δὲ Σύμμαχος ὁ ὑποδείκτης, ἡ δὲ ἐ' ἔκδοσις ὁ φωτίζων, ἄλλη δὲ τις παρὰ ταῦτα ἔκδοσις ἔκτε ὁ διδάσκων· ὥστε ἐξ ἀπάντων τὸν σωτήριον λόγον ὑπονοεῖν. Αὐτὸς γάρ ἐστιν ὁ νομοθετῶν, αὐτὸς καὶ ὁ φωτίζων κ.τ.λ., παρ' οὗ οἱ ἐν τῇ κοιλάδι κλαίοντες μεταλαβόντες εὐλογίας πορεύονται τὴν ἑαυτοῦ πορείαν διανύοντες, καὶ δυναμούμενοι ὁσήμεραι ὡς αἰεὶ προκόπτειν καὶ ἐπιδιδόναι ἐκ δυνάμεως βραχυτέρας ἐπὶ δύναμιν μέλζονα καὶ ἀπὸ δόξης εἰς δόξαν.

11. Write short notes on the following words as used by the LXX, pointing out any illustrations which they afford of the language of the New Testament:—

ἀκηδιά, ἀντιλογία, ἀποφθεγγόμενοι, ἀρχηγός, δεδοξασμένος, δυναστεία, ἐνθύμιον, ἐπαναπαύομαι, εὐλατος, εὐπαθέω, ζφώ, θελητής, καταδυναστεύω, καταθύμιον, κατορθόω, μετεωρισμός, οἰκόπεδον, ὀλγοστός, ὀρθρίζω, περιποιούμαι, ποιμαίνω (ἐν ῥάβδῳ), προσήλυτος, συναγωγή, χάος.

12. Quote in Greek any three consecutive verses from Books III. and IV. of the Psalms.

FRIDAY, December 5, 1884. 1—4.

PHILO.

A.

IN FLACCUM.

1. WHAT does Philo tell us in this book concerning

- (i) the extent to which the Jewish population was spread in Africa;
- (ii) the relations between Rome and the rulers in the Holy Land;
- (iii) the manner of observing the feast of tabernacles?

On the last point give as nearly as you can the author's own words.

2. Translate with notes:

(α) “λελήθατε ἑαυτοὺς οὐ προστιθέντες τοῖς κυρίοις τιμὴν, ἀλλ' ἀφαιρούμενοι; τοῖς πανταχίθεν τῆς οἰκουμένης Ἰουδαίοις ὁρμητήρια τῆς εἰς τὸν σεβαστὸν οἶκον ὁσιότητός εἰσιν αἱ προσευχαὶ ἐπιδήλως, ὧν ἡμῖν ἀναιρεθεισῶν τίς ἕτερος ἀπολείπεται τόπος ἢ τρόπος τιμῆς;” Εἰ μὲν γὰρ ἀφιέντων τῶν ἐθνῶν ὀλιγοῦμεν, τῆς ἀνωτάτω τιμωρίας δίκαιοι τυγχάνειν ἐσμέν, μὴ παρέχοντες ὑρτίους καὶ πλήρεις τὰς ἀμοιβάς. Εἰ δὲ οὐκ ἐξὸν τοῖς ἰδίοις ὑποστέλλομεν νομίμοις, αὐ καὶ τῷ σεβαστῷ φίλον βεβαιοῦν, τί μικρὸν ἢ μέγα πλημμελοῦμεν οὐκ οἶδα, πλὴν εἰ μὴ ψέγειν τις ἐθελήσῃ τὸ μὴ γνώμῃ ἐκουσίῳ παρανομεῖν, τὰς ἐκδικαιήσεις τῶν ἐθνῶν οὐ φυλαξαμένους, αἱ καὶ ἂν ἀφ' ἐτέρων ἄρξωνται, τελευτῶσι πολλάκις εἰς τοὺς αἰτίους. ἀλλ' ὁ μὲν Φλάκκος τὰ τε λεκτέα ἡσυχάζων, καὶ τὰ ἡσυχαστέα λέγων, οὕτως εἰς ἡμᾶς

ἐξημάρτανεν· ἐκεῖνοι δὲ, οἷς ἐχαρίζετο, τίνα γνώμην εἶχον; ἀρά γε τὴν τῶν τιμῶν ἐθελόντων; εἶτα σπάνις ἦν ἱερῶν κατὰ τὴν πόλιν, ἥς τὰ πλείστα καὶ ἀναγκαιότατα μέρη τετεμένισται, πρὸς ἀνάθεσιν ὧν ἐβούλοντο; τιμὴν τῶν φιλαπεχθημόνων μετὰ τέχνης ἐπιβουλευόντων, δι' ἣν οἱ μὲν ἐπηρεάζοντες οὐ δόξουσιν ἀδικεῖν, τοῖς δ' ἐπηρεαζομένοις οὐκ ἀσφαλὲς ἐναντιοῦσθαι.

Into whose mouth is the first sentence put and to whom is it supposed to be addressed?

(β) ἔστι γὰρ, ἔστι καὶ ἐν ἀτιμίᾳ βραχύ τι τῶν εἰς ἐπιτιμίαν εὔρειν, καὶ ἐν ὕβρει παραφερόμενόν τι τῶν εἰς τὸ ἀνύβριστον, ὅταν τις αὐτὰς ἐφ' ἑαυτῶν ἐᾷ τὰς φύσεις τῶν πραγμάτων ἐξετάζεσθαι, μὴ προστιθεὶς οἴκοθεν ἐπίβουλον πάθος, δὲ πάνθ' ὅσα παραμέμικται τῆς ἐπικεκσπέρας ιδέας, ὑφαίρει καὶ διοικίζει.

3. Write brief notes on the following words and phrases, giving the context where it is needed or explaining how the words occur.

πρὸ τοῦ λεγομένου τὸ ἡσυχάζομενον αἰσθεσθαι—εἰκαῖος—ἐπιβουλὴ ἢ ἀνωτάτω—ἡ θεὰ διενενέμητο—τὸ στρατευόμενον πλῆθος—τετράδιον—μισθοδοτήσας τοὺς ἀλειφοβίους καὶ φωνομαζεῖν εἰωθότας—τὰ ἐξητασμένα πρὸς τὸ περίεργον—τὸν ἐν κόσμῳ κόσμον ἰδών.

4. In what senses, and in what context does Philo use the following words?

ἀλείφω, οἰδέω, ὑπερτίθεσθαι, ἐπενωνίζω, ὑποτροπιάζω,

also

φορά, λῆξις, ἐξούσιος, ἀπόπειρα, πίστις, τὸ ἀγελαῖον.

5. Explain the words:

Δικαιοκρατία, Μάριν, ἡ ὑποταίνιος, Ἱεροπόλις, σπαθήφορος.

B.

DE LEGATIONE AD GAIUM.

1. State briefly what we learn from this book as to the aspect which the Roman empire presented to Jews not living in Judea. Sketch briefly the character of Agrippa as drawn by Philo, quoting any characteristic phrases.

2. Quote (1) any proverbial expressions, (2) any terms derived from Greek philosophy or religion, and (3) any syntactical peculiarities, that have struck you in this book.

3. Translate and where necessary explain the following words and phrases, pointing out cases in which they illustrate the language of the New Testament, or are otherwise interesting or peculiar as here used:—

ἀγωνία, ἀνάστασις, ἄπιστος, ἀρετάω, αὐχμηρός, τὰ ἐγκύκλια, ἐξαιρέτος, ἐπιμέλεια, ἐπιφανής, ἐπιφάνεια, ἐν καλῇ τῆς οἰκουμένης, λόγιος, νήφω, παλιγγενεσία, πρεσβεία, προηγούμενος, σύνοδος, σωφρονίζω, ὕλη, ὑπομνηματικά, ἐφημερίδες.

4. Translate with notes

(1) Ἄλλ' ὅμως οὔτε ἐξέκισε τῆς Ῥώμης ἐκείνους, οὔτε τὴν Ῥωμαϊκὴν αὐτῶν ἀφείλετο πολιτείαν, ὅτι καὶ τῆς Ἰουδαϊκῆς ἐφρόντιζεν, οὔτε ἐνεωτέρισεν εἰς τὰς προσευχάς, οὔτε ἐκώλυσε συνάγεσθαι πρὸς τὰς τῶν νόμων ὑψηγῆσεις, οὔτε ἠναντιώθη τοῖς ἀπαρχομένοις, ἀλλ' οὕτως ὥσιντο περὶ τὰ ἡμέτερα ὥστε μόνον οὐ πανοίκιος ἀναθημάτων πολυτελείαις τὸ ἱερὸν ἡμῶν ἐκόσμησε, προστάξας καὶ δι' αἰῶνος ἀνάγεσθαι θυσίας ἐνδελεχεῖς ὁλοκαύτους καθ' ἐκάστην ἡμέραν ἐκ τῶν ἰδίων προσόδων, ἀπαρχὴν τῇ ὑψίστῃ θεῷ, αἱ καὶ μέχρι τοῦ νῦν ἐπιτελοῦνται καὶ εἰς ἅπαν ἐπιτελεσθήσονται, μῆνυμα τρόπων ὄντως αὐτοκρατορικῶν.

(2) Τοῖς δὲ ἀγαθοῖς ἀγαθὰς ὑπηρεῖν ἔοικε γνώμας ὁ θεός, δι' ὧν ὠφελούντες ὠφεληθήσονται, ὅπερ καὶ ἐκείνῃ συνέβη. τίνες οὖν ἦσαν αἱ γνώμαι; μὴ κατεπείγειν τοὺς δημιουργούς, ἀλλ' ἀναπείθειν εὖ τετεχνιτευμένον ἀπεργάσασθαι τὸν ἀνδριάντα, στοχαζομένους καθ' ὅσον αὖ οἶόν τε ἢ μὴ ἀπολειφθῆναι τῶν διωνομασμένων ἀρχετύπων εἰς πλείονος χρόνου μῆκος, ἐπειδὴ τὰ μὲν αὐτοσχέδια φιλεῖ πῶς ἐπιτέμνεσθαι, τὰ δὲ σὺν πόνῳ καὶ ἐπιστήμῃ μῆκος χρόνων ἐπιζητεῖν ἦν ὃ ἡτήσαντο πρεσβεῖαν οὐκ ἐπιτρέπειν, ἀσφαλὲς γὰρ οὐκ εἶναι.

(3) Παρακλητεύουσι τοῖς νόμοις αὐτοκρατεῖς πρὸς αὐτοκράτορα, σεβαστοὶ πρὸς σεβαστόν, πάπποι καὶ πρόγονοι πρὸς ἕκγονον, πλείους πρὸς ἓνα, μόνον οὐχὶ φάσκοντες Ἐν ταῖς ἡμετέραις βουλήσεσιν ἃ μέχρι καὶ τήμερον ἐφυλάχθη νόμιμα μὴ καθέλῃς.

(4) Βουλόμεθα μαθεῖν, ἔφη, τίσι χρῆσθε περὶ τῆς πολιτείας δικαίοις. Ἀρξαμένων δὲ λέγειν καὶ διδάσκειν, ἀπογευσάμενος τῆς δικαιολογίας καὶ συνεὶς ὥς οὐκ ἔστιν εὐκαταφρόνητος, πρὶν ἐπενεγκεῖν τὰ ἐχυρώτερα συγκόψας καὶ τὰ πρότερα, ὁρομαῖος εἰς μέγαν οἶκον εἰσεπήδησεν.

5. Translate

Ἡ γὰρ καθ' ἡμᾶς φιλοσοφία πρότερον μὲν ἐν βαρβάροις ἤκμασεν, ἐπανθήσασα δὲ τοῖς σοῖς ἔθνεσι κατὰ τὴν Αὐγούστου τοῦ σου προγόνου μεγάλῃ ἀρχῇ ἐγενήθη μάλιστα τῇ σῇ βασιλείᾳ αἰσιον ἀγαθόν. ἔκτοτε γὰρ εἰς μέγα καὶ λαμπρὸν τὸ Ῥωμαίων ηὔξῃ κρᾶτος, οὗ σὺ διάδοχος εὐκταῖος γέγονάς τε καὶ ἔσῃ μετὰ τοῦ παιδὸς φυλάσσων τῆς βασιλείας τὴν σύντροφον καὶ συναρξαμένην Αὐγούστῳ φιλοσοφίαν, ἣν καὶ οἱ πρόγονοί σου πρὸς ταῖς ἄλλαις θρησκείαις ἐτίμησαν. καὶ τοῦτο μέγιστον τεκμήριον τοῦ πρὸς ἀγαθοῦ τὸν καθ' ἡμᾶς λόγον συνακμάσαι τῇ καλῶς ἀρξαμένῃ βασιλείᾳ, ἐκ τοῦ μηδὲν φαῦλον ἀπὸ τῆς Αὐγούστου ἀρχῆς ἀπαντῆσαι, ἀλλὰ τούναντίον ἅπαντα λαμπρὰ καὶ ἔνδοξα κατὰ τὰς πάντων εὐχάς.

MELITO.

SECOND GENERAL EXAMINATION FOR THE ORDINARY B.A. DEGREE.

WEDNESDAY, November 26, 1884. 9—12.

ACTS OF THE APOSTLES.

(A)

1. COMPARE the account of the Ascension given in the Acts, with that found in any of the Gospels.

2. Give St Paul's own account of his sufferings during his missionary journeys.

3. Translate :

(a) ἐξίσταντο δὲ πάντες καὶ διηποροῦντο, ἄλλος πρὸς ἄλλον λέγοντες Τί θέλει τοῦτο εἶναι ; ἕτεροι δὲ διαχλευάζοντες ἔλεγον ὅτι Γλεύκους μεμεστωμένοι εἰσίν. Σταθεῖς δὲ ὁ Πέτρος σὺν τοῖς ἑνδεκα ἐπῆρεν τὴν φωνὴν αὐτοῦ καὶ ἀπεφθέγγετο αὐτοῖς Ἄνδρες Ἰουδαῖοι καὶ οἱ κατοικοῦντες Ἱερουσαλὴμ πάντες, τοῦτο ὑμῖν γνωστὸν ἔστω καὶ ἐνωτίσασθε τὰ ῥήματά μου. οὐ γὰρ ὡς ὑμεῖς ὑπολαμβάνετε οὗτοι μεθύουσιν, ἔστιν γὰρ ὥρα τρίτη τῆς ἡμέρας, ἀλλὰ τοῦτό ἐστιν τὸ εἰρημένον διὰ τοῦ προφήτου Ἰωήλ.

Quote the prophecy referred to and give the name of its author.

Parse and derive ἐξίσταντο and ἐνωτίσασθε.

(b) οὗτός ἐστιν ὁ γενόμενος ἐν τῇ ἐκκλησίᾳ ἐν τῇ ἐρήμῳ μετὰ τοῦ ἀγγέλου τοῦ λαλοῦντος αὐτῷ ἐν τῷ ὄρει Σινὰ καὶ τῶν πατέρων ἡμῶν, ὃς ἐδέξατο λόγια ζῶντα δοῦναι ὑμῖν, ᾧ οὐκ ἠθέλησαν ὑπήκοοι γενέσθαι οἱ πατέρες ἡμῶν ἀλλὰ ἀπώσαντο καὶ ἐστράφησαν ἐν ταῖς καρδίαις αὐτῶν εἰς Αἴγυπτον, εἰπόντες τῷ Ἀαρών Ποίησον ἡμῖν θεοὺς οἱ προπορεύονται ἡμῶν· ὁ γὰρ Μωυσῆς οὗτος, ὃς ἐξήγαγεν ἡμᾶς ἐκ γῆς Αἰγύπτου, οὐκ οἶδαμεν τί ἐγένετο αὐτῷ.

Who is the speaker of these words, and to what is he referring?

(c) καὶ ὁ Πέτρος ἐν ἑαυτῷ γενόμενος εἶπεν Νῦν οἶδα ἀληθῶς ὅτι ἐξάψεται ὁ κύριος τὸν ἄγγελον αὐτοῦ καὶ ἐξελάτῳ με ἐκ χειρὸς Ἡρῴδου καὶ πάσης τῆς προσδοκίας τοῦ λαοῦ τῶν Ἰουδαίων. συνιδὼν τε ἦλθεν ἐπὶ τὴν οἰκίαν τῆς Μαρίας τῆς μητρὸς Ἰωάννου τοῦ ἐπικαλουμένου Μάρκου, οὗ ἦσαν ἱκανοὶ συνηθροισμένοι καὶ προσευχόμενοι. κρούσαντος δὲ αὐτοῦ τὴν θύραν τοῦ πυλῶνος προσῆλθε παιδίσκη ὑπακοῦσαι ὀνόματι Ρόδη.

What is known of this Herod? Who was Emperor at this time, and what was the position of the Herods in regard to Roman government?

(d) τῶν δὲ ναυτῶν ζητούντων φυγεῖν ἐκ τοῦ πλοίου καὶ χαλασάντων τὴν σκάφην εἰς τὴν θάλασσαν προφάσει ὡς ἐκ πύργου ἀγκύρας μελλόντων ἐκτείνειν, εἶπεν ὁ Παῦλος τῷ ἑκατοντάρχῃ καὶ τοῖς στρατιώταις Ἐὰν μὴ οὗτοι μείνωσιν ἐν τῷ πλοίῳ, ὑμεῖς σωθῆναι οὐ δύνασθε. τότε ἀπέκοψαν οἱ στρατιῶται τὰ σχοινία τῆς σκάφης καὶ εἶσαν αὐτὴν ἐκπεσεῖν.

About how long did St Paul's journey to Rome occupy? Where did he land in Italy?

4. Explain, giving the context:

(a) οὗτός ἐστιν ὁ λίθος ὁ ἐξουθενηθεὶς ὑφ' ὑμῶν τῶν οἰκοδόμων.

(b) οἱ δὲ ἀκούοντες διεπρίοντο καὶ ἐβουλεύοντο ἀνελεῖν αὐτούς.

(c) ἐγὼ εἰμι Ἰησοῦς ὃν σὺ διώκεις.

(d) ἐγένετο χρηματίσαι πρῶτως ἐν Ἀντιοχείᾳ τοὺς μαθητὰς χριστιανούς.

5. To what date do the events recorded in the Acts extend? What reasons are there for supposing the author of the third Gospel and of the Acts to be the same person?

6. Give the substance of St Paul's speech at Athens. Point out how far it was adapted to the nature of his audience.

WEDNESDAY, November 26, 1884. 9—12.

ACTS OF THE APOSTLES.

(B)

1. WHAT indications are there of the progress of the Church in Jerusalem up to the time of the Martyrdom of St Stephen?

2. On what occasions is St Paul stated to have visited Jerusalem?

3. Translate:

(a) Ἄνδρες Ἰσραηλῆται, ἀκούσατε τοὺς λόγους τούτους. Ἰησοῦν τὸν Ναζωραῖον, ἄνδρα ἀποδεδειγμένον ἀπὸ τοῦ θεοῦ εἰς ὑμᾶς δυνάμεσι καὶ τέρασι καὶ σημείοις οἷς ἐποίησεν δι' αὐτοῦ ὁ θεὸς ἐν μέσῳ ὑμῶν, καθὼς αὐτοὶ οἴδατε, τοῦτον τῇ ὀρισμένῃ βουλῇ καὶ προγνώσει τοῦ θεοῦ ἔκδοτον διὰ χειρὸς ἀνόμων προσπήξαντες ἀνείλατε, ὃν ὁ θεὸς ἀνέστησεν λύσας τὰς ῥάνας τοῦ θανάτου, καθότι οὐκ ἦν δυνατόν κρατεῖσθαι αὐτὸν ὑπ' αὐτοῦ. Δαυεὶδ γὰρ λέγει εἰς αὐτόν

Προορώμην τὸν Κύριον ἐνώπιόν μου διὰ παντός,
ὅτι ἐκ δεξιῶν μου ἐστὶν ἵνα μὴ σαλευθῶ.

Complete the quotation of the Psalm.

Distinguish between δυνάμεις, τέρατα, σημεία.

(b) ἔστρεψεν δὲ ὁ θεὸς καὶ παρέδωκεν αὐτοὺς λατρεύειν τῇ στρατιᾷ τοῦ οὐρανοῦ, καθὼς γέγραπται ἐν Βίβλῳ τῶν προφητῶν

Μὴ σφάγια καὶ θυσίας προσηγάγατέ μοι
 ἔτη τεσσαράκοντα ἐν τῇ ἐρήμῳ, οἶκος Ἰσραὴλ;
 καὶ ἀνελάβετε τὴν σκηνὴν τοῦ Μολόχ
 καὶ τὸ ἄστρον τοῦ θεοῦ Ῥομφά,
 τοὺς τύπους οὓς ἐποιήσατε προσκυνεῖν αὐτοῖς.
 καὶ μετοικιῶ ὑμᾶς ἐπέκεινα Βαβυλῶνος.

Ἡ σκηνὴ τοῦ μαρτυρίου ἦν τοῖς πατράσιν ἡμῶν ἐν τῇ ἐρήμῳ, καθὼς διετάξατο ὁ λαλῶν τῷ Μωυσῇ ποιῆσαι αὐτὴν κατὰ τὸν τύπον ὃν ἐώρακει.

Who is the speaker, and to what events is he referring?

(c) γενομένης δὲ ἡμέρας ἦν τάραχος οὐκ ὀλίγος ἐν τοῖς στρατιώταις, τί ἄρα ὁ Πέτρος ἐγένετο. Ἡρώδης δὲ ἐπιζητήσας αὐτὸν καὶ μὴ εὐρὼν ἀνακρίνας τοὺς φύλακας ἐκέλευσεν ἀπαχθῆναι, καὶ κατελθὼν ἀπὸ τῆς Ἰουδαίας εἰς Καισαρίαν διέτριβεν. Ἦν δὲ θυμομαχῶν Τυρίοις καὶ Σιδωνίοις ὁμοθυμαδὸν δὲ παρῆσαν πρὸς αὐτόν, καὶ πείσαντες Βλάστον τὸν ἐπὶ τοῦ κοιτῶνος τοῦ βασιλέως ἤτουντο αἶρήν διὰ τὸ τρέφεσθαι αὐτῶν τὴν χώραν ἀπὸ τῆς βασιλικῆς.

Which of the Herods is referred to, and what were his dominions? What is known of Cæsarea?

(d) μετὰ δὲ τρεῖς μῆνας ἀνήχθημεν ἐν πλοίῳ παρακεχειμακότι ἐν τῇ νήσῳ Ἀλεξανδρινῷ, παρασήμερ Διοσκοῦροις. καὶ καταχθέντες εἰς Συρακούσας ἐπεμείναμεν ἡμέρας τρεῖς, ὅθεν περιελόντες κατηντήσαμεν εἰς Ῥήγιον. καὶ μετὰ μίαν ἡμέραν ἐπιγενομένου νότου δευτεραῖοι ἤλθομεν εἰς Ποτιόλους, οὗ εὐρόντες ἀδελφούς παρεκλήθημεν παρ' αὐτοῖς ἐπιμεῖναι ἡμέρας ἑπτὰ καὶ οὕτως εἰς τὴν Ῥώμην ἤλθαμεν.

Where did St Paul winter on his way to Rome? By what road did he proceed from Puteoli to Rome, and what places on it are mentioned?

4. Explain, giving the context:

- (a) ἐπέστησαν αὐτοῖς οἱ ἱερεῖς καὶ ὁ στρατηγὸς τοῦ ἱεροῦ.
- (b) τὸ ἀργύριόν σου σὺν σοὶ εἴη εἰς ἀπώλειαν.
- (c) οὐδέποτε ἔφαγον πᾶν κοινὸν καὶ ἀκάθαρτον.
- (d) καὶ ἡμεῖς ὁμοιοπαθεῖς ἐσμέν ὑμῖν ἄνθρωποι.

5. In what sense are the Acts a continuation of the Gospel of St Luke? What indication is there of St Luke being an eye-witness of any part of the events?

6. By what right did St Paul appeal to Cæsar? On what other occasion and on what other point did he appeal to the protection of Roman law?

WEDNESDAY, Nov. 26, 1884. 2—5.

STATICS.

(A)

1. DEFINE a force, and enumerate the principal forces with which we deal in ordinary Statics.

A heavy chain of length 12 ft. 8 in. and weighing 19 lbs. has a weight of 3 lbs. attached to one end, and hangs in equilibrium over a smooth peg; what length of it hangs on each side?

2. Enunciate the 'Parallelogram of Forces' and deduce from it the 'Triangle of Forces'.

Shew that if three forces be *fully* represented by the sides of a triangle, they cannot be in equilibrium.

3. Given the centres of gravity of two parts of a body, show how to find that of the whole body.

Two rectangular pieces of the same cardboard of lengths 6 and 8 inches and breadths 2 and $2\frac{1}{2}$ inches respectively, are placed, touching but not overlapping one another, on a table, so as to form a T-shaped figure, the former piece forming the cross-bar. Find the position of the centre of gravity.

4. A heavy body is supported entirely by a number of strings all attached to one peg; shew that the centre of gravity of the body must be vertically below the peg.

5. Prove, for the case of two parallel forces acting in similar directions, that the sum of their moments about any point is equal to the moment of their resultant about the same point.

Assuming the same theorem true for the resultant of any two forces, prove that, if a body, which can turn freely about a fixed point, be in equilibrium under the action of any forces, then the sum of the moments of these forces about this point is zero.

6. Describe the common balance, mentioning what are its chief requisites.

Which of these is most important in the case of a chemical balance, and which in that of a machine for weighing heavy goods?

7. In a balance, which rests in a horizontal position when unloaded, but whose arms are of different lengths, a body when weighed in one scale appears to weigh W lbs. and when weighed in the other W' pounds. Prove that its true weight is $\sqrt{WW'}$.

If in such a balance the apparent weights are 32 and $36\frac{1}{2}$ lbs., and the whole length of the beam $2\frac{1}{2}$ ft., find the length of either arm.

8. Sketch the system of pulleys in which there is only one continuous string, and find an expression for its mechanical advantage.

9. Shew clearly that the inclined plane gives a means of obtaining mechanical advantage.

Mention two other machines that may be considered cases of the inclined plane.

10. In a common steelyard the body to be weighed is attached at one end A , the fulcrum being distant 5 and the centre of gravity of the beam 7 inches from A . The weight of the beam being 1 lb., that of the moveable weight 3 lbs., and that of the heaviest body that can be weighed by the instrument 19 lbs., find the length of the beam.

WEDNESDAY, Nov. 26, 1884. 2—5.

STATICS.

(B)

1. EXPLAIN the meaning of the terms component and resultant forces.

A heavy chain of length 8 ft. 9 in., and weighing 15 lbs., has a weight of 7 lbs. attached to one end, and hangs in equilibrium over a smooth peg. What length of it hangs on each side?

2. Enunciate the 'Triangle of Forces,' and deduce the 'Polygon of Forces.'

Shew that if four forces be *fully* represented by the sides of a quadrilateral figure taken in order, they cannot be in equilibrium.

3. Given the centres of gravity of the whole and one part of a body, shew how to find that of the remaining part.

From the corner of a square piece of cardboard, whose side is 6 inches long, another square is cut away whose side is 2 inches; find the centre of gravity of the remaining piece.

4. A heavy body is supported by two strings attached to different pegs and to different parts of the body, shew that the directions of the strings when produced must meet in the vertical through the centre of gravity of the body.

5. Prove, for the case of two parallel forces acting in opposite directions, that the sum of their moments about any point is equal to the moment of their resultant about the same point.

Assuming the same theorem true for the resultant of any two forces, prove that, if a body which can turn freely about a fixed point, be in equilibrium under the action of any forces, then the sum of the moments of these forces about the fixed point is zero.

6. Define *mechanical advantage* and enumerate the more usual means of obtaining it.

Describe the Wheel and Axle, pointing out how it is merely a particular case of the Lever.

7. Investigate a formula to give the true weight of a body, which, when weighed in the two scales of a balance with arms of unequal lengths, appears to weigh W and W' respectively, the balance being such that it rests in a horizontal position when unloaded.

If in such a balance the apparent weights are $42\frac{1}{2}$ and 49 lbs., and the whole length of the beam is $2\frac{1}{2}$ ft., find the length of either arm.

8. Sketch the system of pulleys in which each pulley hangs in the loop of a separate string, and find an expression for its mechanical advantage.

9. A heavy particle being supported on an inclined plane by a string, one end of which is fastened to the particle and the other to a point in the plane, shew clearly that the tension of the string must be less than the weight of the body.

10. The beam of a common steelyard is 3 feet long, the body to be weighed being attached at one end A ; the fulcrum is distant 5 and the centre of gravity of the beam 7 inches from A . The weight of the beam being 1 lb. and that of the moveable weight 3 lbs., find the heaviest weight that can be weighed by this instrument.

THURSDAY, Nov. 27, 1884. 9—12.

HYDROSTATICS AND HEAT.

(A)

1. DISTINGUISH between a *fluid* and a *rigid body*.

A closed vessel with vertical sides is full of a liquid, to a square inch of the upper surface of which a pressure of 1 lb. is applied. Compare, without numerical calculation, the pressures on the base and sides of the vessel with what they would be, if the liquid was replaced by a rigid body of the same shape and size.

2. Prove that the pressures at any two points, which are in the same horizontal plane, in a heavy fluid at rest, are equal to one another.

3. Shew how to find the specific gravity of a mixture, when the volumes and specific gravities of the components are known.

When equal *volumes* of two substances are mixed together, the specific gravity of the mixture is 4; when equal *weights* of the same substances are mixed together, the specific gravity of the mixture is 3. Find the specific gravities of the two substances.

4. A body of uniform density floats, partly immersed in water, find the conditions of equilibrium.

A block of wood, whose weight is 63 lbs., and whose specific gravity is '6, is floating in a pond. If a ball of lead whose specific gravity is 11·5, be attached to the block by a string, find the least weight which the ball can have so as to keep the block quite under water.

5. Mercury is poured into a uniform bent tube, open at both ends, and having its two branches vertical. One end is closed, its height above the mercury being four inches. How much mercury must be poured into the open end, so that the mercury may rise one inch in the closed branch, the height of the barometer being 30 inches?

6. Describe Hawksbee's Air-Pump; and find the density of the air in the receiver after n strokes.

The upper end of a vertical glass tube opens into the receiver of an air-pump, and the lower end dips into a cup containing mercury; explain how this arrangement shews the density of the air in the receiver.

7. For what temperatures are *alcohol* thermometers preferable to *mercurial*? How are very high temperatures measured?

A thermometer is graduated on both the *Fahrenheit* and *Centigrade* scales: on a certain day the readings on these scales differ by 36° . What would then be the reading on a *Reaumur's* thermometer at the same place?

8. What is the use of a *Maximum Thermometer*? Describe an instrument of this sort.

9. What is meant by the *Absolute Zero* of the air thermometer? If a certain quantity of air be kept continually under the same pressure, what connection will there be between its density and its absolute temperature?

A quantity of gas occupies 150 cubic inches at a temperature of 2°C . when the barometer stands at 29.7 inches. What space will it occupy if the temperature rise to 16°C . and the barometer rise to 30.6 inches, the absolute zero of the air thermometer being -273°C .?

10. Define the *latent heat of evaporation*; and explain how it may be practically determined in the case of steam.

Ten grains of steam at 100°C . are introduced into 1000 grains of water at 0°C ., and the temperature of the water is thus raised to 6.3°C . Find the latent heat of steam.

11. Define *Specific Heat*; and shew how the specific heat of a substance may be found by the aid of *Black's Calorimeter*.

12. Wine is cooled in hot countries by wrapping the bottle which contains it in wet flannel, and then hanging it up in the sun. Explain this.

THURSDAY, Nov. 27, 1884. 9—12.

HYDROSTATICS AND HEAT.

(B)

1. DEFINE the *pressure at a point* in a fluid.

Explain the principle of the "transmission of fluid pressure."

2. Prove that the surface of a heavy fluid, which is at rest, is a horizontal plane.

How is this principle taken advantage of for the purpose of taking water to the tops of houses?

3. Show how to find the specific gravity of a mixture, when the weights and specific gravities of the components are known.

When equal *volumes* of two substances are mixed together, the specific gravity of the mixture is 3; when equal *weights* of the same substances are mixed together the specific gravity of the mixture is $2\frac{1}{2}$. Find the specific gravities of the two substances.

4. A body of uniform density floats, wholly immersed in water, and is partly supported by a vertical string, find the conditions of equilibrium.

A ball of lead, whose weight is 23 lbs., and whose specific gravity is 11.5, lies at the bottom of a pond. Find the weight of the least block of wood, whose specific gravity is .6, which when attached to the ball will raise it from the bottom of the water.

5. Mercury is poured into a uniform bent tube, open at both ends, and having its two branches vertical. One end is then closed, its height above the mercury being five inches. How much mercury must be poured into the open end, so that the mercury may rise one inch in the closed branch, the height of the barometer being 30 inches?

6. Describe the Condenser, and find the density of the air in the receiver after n strokes of the piston.

A glass tube, closed at one end, has its other end opening into the receiver of a condenser. It contains a small portion of mercury, between which and the closed end of the tube there is air; explain how this arrangement shows the density of the air in the receiver.

7. Explain how a *mercurial thermometer* is filled and graduated. What properties of mercury render it especially fit to be employed in the formation of a thermometer?

A thermometer is graduated on both the *Fahrenheit* and *Centigrade* scales: on a certain day the readings on these scales differ by 40° . What would then be the reading on a *Reaumur's* thermometer at the same place?

8. What is the use of a *Minimum Thermometer*?

Describe an instrument of this sort.

9. What is meant by *absolute temperature*? If a certain quantity of air continually occupy the same space, what connection will there be between its pressure and its absolute temperature?

A quantity of gas occupies 204 cubic inches at a temperature of 16°C . when the barometer stands at 30.6 inches. What space will it occupy if the temperature be reduced to 2°C . and the barometer fall to 29.7 inches, the absolute zero of the air thermometer being -273°C .?

10. Define the *latent heat of fusion*; and explain how it may be practically determined in the case of water.

One pound of ice at 0°C . is immersed in four pounds of boiling water, and after the ice has melted the temperature of the water is 64.2°C . Find the latent heat of water.

11. Describe *Bunsen's Calorimeter*, and explain how the specific heat of a substance may be found by its means.

12. How is it that, if we cover ourselves with a blanket, it keeps us *warm*; but if we wrap it round a block of ice it keeps it *cool*?

THURSDAY, November 27, 1884. 2—5.

PLAUTUS. TRINUMMUS.

(A)

1. WRITE a short life of Plautus. From what source did he take his comedies?

2. On what occasions were plays usually acted at Rome, and in what kind of building?

3. *Sed de argumento ne expectetis fabulae,
Senes qui huc uenient i rem uobis aperient.*

Translate: Who are the old men, and how much of the plot do they discover?

4. Translate, commenting on words in italics:

(1) CA. Subigis maledictis me tuis, Megaronides,
Nouo modo adeo ut quod meae concreditumst
Taciturnitati clam, *fide* et fiduciae,
Ne enuntiarem quoiquam neu facerem palam,
Vt mihi necesse sit iam id tibi concedere.
ME. Mihi quod credideris, sumes ubi *posiueris*.

(2) LV. Edepol deum uirtute dicam, pater, et maiorum et tua
Multa bona bene parta habemus: bene si amico feceris,
Ne pigeat fecisse: *ut* potius *pudeat*, si non feceris.
PH. De magnis diuitiis siquid demas, plus fit an minus?
LV. Minus, pater: set. cui inmoeni *scin* quid cantari solet?
Quod habes ne habeas et nunc quod non habes habeas uelim,
Quando quidem nec tibi bene esse pote pati neque alteri.

(3) CH. Fassu's Charmidem dedisse aurum tibi. SV. Scriptum quidem.
CH. Properas an non propere abire *actutum* ab his regionibus,
Dormitator, prius quam ego hic te iubeo mulcari male?
SV. Quam ob rem? CH. Quia illum quem ementitu's is ego sum ipse Charmides,
Quem tibi epistulas dedisse aiebas. SV. Eho, quaeso an tu is es?
CH. Is enim uero sum. SV. *Ain* tu tandem? is ipsusne's? CH. Aio. SV. Ipse es?
CH. *Ipsus*, inquam, Charmides sum. SV. Ergo ipsusne's? CH. Ipsissimus.
Abin hinc ab oculis? SV. Enim uero sero quoniam huc aduenis,
Vapulabis meo arbitratu et *nouorum aedilium*.

5. Explain:

- (1) ubi usus nihil erit ei dicto 'spondeo'
dicebat: nunc hic cum opus est non quit dicere.
- (2) caue sis ne bubuli in te cottabi crebri crepent.
- (3) atque tibi, Neptune, ante alios deos grates ago atque habeo summas.
- (4) sero atque stulte, prius quod cautum oportuit
postquam comedit rem post rationem putat.

6. Derive and explain: adfinitas, peculium, sectius, tis, faxo, texier, temperi.

THURSDAY, November 27, 1884. 2—5.

PLAUTUS. TRINUMMUS.

(B)

1. At what time did Plautus live, and what Roman writers of Comedy had preceded him?

2. When and for what purpose was the representation of plays said to have been first introduced in Rome? Whose duty chiefly was it to provide the plays?

3. *Adulescens quidamst qui in hisce habitat aedibus
Is rem paternam me adiutrice perdidit.*

Translate: Who is speaking? What is the scene represented on the stage?

4. Translate, commenting on the words in italics:

- (1) CA. Quid tibi ego dicam? qui illius sapientiam
Et meam fidelitatem et celata omnia
Paene ille ignavos funditus *pessum* dedit.
ME. Quidum? CA. Quia, *ruri* dum sum ego unos sex dies,
Me absente atque insciente, inconsultu meo,
Aedis *uenalis* hasce *inscribit* literis.
- (2) PH. Exprobras bene quod fecisti? tibi fecisti, non mihi:
Mihi quidem aetas actast ferme, *tua* istuc *refert* maxime.
Benefacta benefactis aliis pertegito, ne perpluant:
Is probust, quem paenitet quam probus sit et *frugi bonae*.
Qui *ipsus* sibi satis placet, nec probus est nec frugi bonae:
Qui *ipsus* se contempnit, in eost indoles industriae.
- (3) ST. Abiit hercle ille. ecquid audis, Lusiteles? ego te uolo.
Hic quoque hinc abiit. Stasime, restas solus: quid ego nunc agam
Nisi uti sarcinam constringam et clupeum ad dorsum adcommodem,
Fulmentas iubeam suppingi soccis? non sisti potest.
Video caculam militarem me futurum hau longius.
Atque aliquem *ad regem* in saginam quom erus se coniexit meus,
Credo ad summos bellatores acrem—fugitorem fore,
Et capturum ibi spolia illum qui—meo ero aduersus uenerit.
Egomet quom extemplo arcum et pharetram mi et sagittas sumpsero,
Cassidem in caput,—dormibo *placidule* in tabernaculo.

5. Explain:

- (1) quin fabulare 'di bene uortant,' et 'spondeo.'
(2) sin ipse animum pepulit uictor uictorum cluet.
(3) faxo haud tantillum dederis uerborum mihi.
(4) itast amor, ballista ut iacitur: nil sic celerest neque uolat:
atque is mores hominum moros et morosos ecfcit.

6. Derive and explain: mupolae, potin', ferentarius, annona, gerrae, peregre, apage.

FRIDAY, November 28, 1884. 9—12.

HERODOTUS. BOOK VI.

(A)

I. TRANSLATE:

(a) τίνα δαιμόνων παραβάντες τάδε ἀναπίμπλαμεν; οἵτινες παραφρονήσαντες καὶ ἐκπλώσαντες ἐκ τοῦ νόου ἀνδρὶ Φωκαίῃ ἀλαζόνι, παρεχομένῳ νέας τρεῖς, ἐπιτρέψαντες ἡμέας αὐτοὺς ἔχομεν· ὁ δὲ παραλαβὼν ἡμέας λυμαίνεται λύμῃσι ἀνηκέστοισι, καὶ δὴ πολλοὶ μὲν ἡμέων ἐς νούσους πεπτώκασι, πολλοὶ δὲ ἐπίδοξοι τὸντὸ τοῦτο πείσεσθαι.

ἀναπίμπλαμεν. Illustrate this metaphor.

Describe the general character of the government by Persia over the Ionian Greeks.

(b) πρὸς ταύτην δὲ τὴν κατηγορίην Κλεομένης ὁ Ἀναξανδρίδω βασιλεὺς ἐὼν Σπαρτιητέων διέβη ἐς Αἰγιναν, βουλόμενος συλλαβεῖν Αἰγινητέων τοὺς αἰτιωτάτους. ὥς δὲ ἐπειρᾶτο συλλαμβάνων, ἄλλοι τε δὴ αὐτῷ ἐγίνοντο ἀντίξοοι τῶν Αἰγινητέων, ἐν δὲ δὴ καὶ Κρίος ὁ Πολυκρίτου μάλιστα, ὃς οὐκ ἔφη αὐτὸν οὐδένα ἄξιον χαίροντα Αἰγινητέων· ἄνευ γάρ μιν Σπαρτιητέων τοῦ κοινοῦ ποιεῖν ταῦτα ὑπ' Ἀθηναίων ἀναγνωσθέντα χρήμασι· ἅμα γὰρ ἂν μιν τῷ ἐτέρῳ βασιλεῖ ἐλθόντα συλλαμβάνειν.

Explain the construction of the last sentence. What do you deduce from this passage as to the relative positions of the Greek States?

(c) γέρεά τε δὴ τάδε τοῖσι βασιλεῦσι Σπαρτιῇται δεδώκασι· ἱρῶσύνας δύο, Διὸς τε Λακεδαιμόνος καὶ Διὸς οὐρανοῦ, καὶ πόλεμόν γε ἐκφέρειν ἐπ' ἣν ἂν βούλωνται χώραν, τούτου δὲ μηδένα εἶναι Σπαρτιητέων διακωλυτήν, εἰ δὲ μὴ, αὐτὸν ἐν τῷ ἁγεί ἐνέχεσθαι· στρατευομένων δὲ πρώτους ἰέναι τοὺς βασιλέας, ὑστάτους δὲ ἀπιέναι· ἑκατὸν δὲ ἄνδρας λογάδας ἐπὶ στρατιῆς φυλάσσειν αὐτοὺς.

ἐν τῷ ἁγεί ἐνέχεσθαι. Illustrate the meaning of this by examples.

(d) ὁ δὲ διωθέετο ἀντυποκρινόμενος τοιάδε· οὔτε μέμνημαι τὸ πρῆγμα, οὔτε με περιφέρει οὐδὲν εἰδέναι τούτων τῶν ὑμεῖς λέγετε, βούλομαί τε ἀναμνησθεῖς ποιεῖν πᾶν τὸ δίκαιον· καὶ γὰρ εἰ ἔλαβον, ὀρθῶς ἀποδοῦναι, καὶ εἰ γε ἀρχὴν μὴ ἔλαβον, νόμοισι τοῖσι Ἑλλήνων χρήσομαι ἐς ὑμέας. ταῦτα ὦν ὑμῖν ἀναβάλλομαι κυρώσειν ἐς τέταρτον μῆνα ἀπὸ τοῦδε.

Write a short note on the meanings of ὑποκρίνομαι.

νόμοισι τοῖσι Ἑλλήνων. To what does this refer?

(e) μελλόντων δὲ συνάπτειν μάχην Κορίνθιοι οὐ περιεῖδον, παρατυχόντες δὲ καὶ καταλλάξαντες ἐπιτρέψάντων ἀμφοτέρων, οὕρυσαν τὴν χώραν ἐπὶ τοισίδε, εἰᾶν Θηβαίους Βοιωτῶν τοὺς μὴ βουλομένους ἐς Βοιωτοὺς τελέειν. Κορίνθιοι μὲν δὴ ταῦτα γνόντες ἀπαλλάσσοντο, Ἀθηναίοισι δὲ ἀπιούσι ἐπεθήκαντο Βοιωτοὶ.

What was the subsequent history of Plataea?

II. Comment on the following, illustrating from Herodotus:—*Σαρδὰ νῆσος ἡ μεγίστη—ἀνάσπαστοι ἐς Βάκτρα—ἡ ἱρὴ ὁδός*—the connection of the Thracians with the Greeks—the venality of the Delphic oracle—the intensity of faction warfare—*πεντάεθλον ἐπασκῆσας*—the relative distance by land and sea from Marathon to Athens—*Φεῖδων ὁ τὰ μέτρα ποιήσας—Σκαπτή ἴλῃ*.

FRIDAY, November 28, 1884. 9—12.

HERODOTUS. BOOK VI.

(B)

I. TRANSLATE:

(a) παθοῦσι δὲ ταῦτα Μιλησίοισι πρὸς Περσέων οὐκ ἀπέδωσαν τὴν ὁμοίην Συβαρίται. Συβάριος γὰρ ἀλούσης ὑπὸ Κροτωνιητέων Μιλήσιοι πάντες ἡβηδὸν ἀπεκείραντο τὰς κεφαλὰς καὶ πένθος μέγα προσεθήκαντο· πόλεις γὰρ αὗται μάλιστα δὴ τῶν ἡμεῖς ἴδμεν ἀλλήλησι ἐξεινώθησαν· οὐδὲν ὁμοίως καὶ Ἀθηναῖοι.

οὐδὲν—Ἀθηναῖοι. To what does this refer? Distinguish between the Ionian and other Hellenic races.

(b) καὶ τοῦτον ἅμα τῇ νηὶ εἶλον οἱ Φοίνικες, καὶ μιν πυθόμενοι ὥς εἴη Μιλτιάδew παῖς, ἀνήγαγον παρὰ βασιλέα, δοκέοντες χάριτα μεγάλην καταθήσεσθαι, ὅτι δὴ Μιλτιάδης γνώμην ἀπεδέξατο ἐν τοῖσι Ἴωσι κείθεσθαι κελεύων τοῖσι Σκύθῃσι, ὅτε οἱ Σκύθαι προσεδέοντο λύσαντες τὴν σχεδίην ἀποπλῶειν ἐς τὴν ἐωυτῶν.

καταθήσεσθαι. Explain this metaphor.

(c) μὴ ποιήσασι δὲ τοῦτο ζῆμιαί μεγάλαι ἐπικέεται. νόμος δὲ τοῖσι Λακεδαιμονίοισι κατὰ τῶν βασιλέων τοὺς θανάτους ἐστὶ ὡυτὸς καὶ τοῖσι βαρβάροισι τοῖσι ἐν τῇ Ἀσίῃ· τῶν γὰρ ὧν βαρβάρων οἱ πλεῖνες τῶντῳ νόμῳ χρεόνται κατὰ τοὺς θανάτους τῶν βασιλέων. ἐπεὶ γὰρ ἀποθάνῃ βασιλεὺς Λακεδαιμονίων, ἐκ πάσης δέει Λακεδαίμονος, χωρὶς Σπαρτιητέων, ἀριθμῷ τῶν περιόικων ἀναγκαστοὺς ἐς τὸ κῆδος ἵεναι.

τῶν περιόικων. Explain fully.

(d) μετὰ δὲ ταῦτα Κλεομένηα ἐπαΐστον γενόμενον κακοτεχνήσαντα ἐς Δημάρητον δεῖμα ἔλαβε Σπαρτιητέων, καὶ ὑπεξέσχε ἐς Θεσσαλίην. ἐνθεῦτεν δὲ ἀπικόμενος ἐς τὴν Ἀρκαδίην νεώτερα ἔπρησσε πρήγματα, συνιστὰς τοὺς Ἀρκάδας ἐπὶ τῇ Σπάρτῃ, ἄλλους τε ὄρκους προσάγων σφί ἢ μὴν ἔψεσθαί σφεας αὐτῷ τῇ αὖ ἐξηγήται, καὶ δὴ καὶ ἐς Νώνακριν πόλιν πρόθυμος ἦν τῶν Ἀρκάδων τοὺς προεστεῶτας ἀγνέων ἐξορκοῦν τὸ Στυγὸς ὕδωρ.

ἐξορκοῦν, κ.τ.λ. Explain the construction.

(e) καὶ ταῦτα μέντοι σφί οὐκ ἀποχρᾶν ποιεῖν. ἀλλὰ τέλος καὶ ἐπιβουλεύοντας ἐπιχειρήσειν ἐπ' αὐτοφώρῳ φανῆναι. ἐωυτοὺς δὲ γενέσθαι τοσοῦτῳ ἐκείνων ἄνδρας ἀμείνονας, ὅσῳ παρεὸν αὐτοῖσι ἀποκτεῖναι τοὺς Πελασγούς, ἐπεὶ σφεας ἔλαβον ἐπιβουλεύοντας, οὐκ ἐθελῆσαι, ἀλλὰ σφί προειπεῖν ἐκ τῆς γῆς ἐξίεναι. τοὺς δὲ οὕτω δὴ ἐκχωρήσαντας ἄλλα τε σχεῖν χωρία καὶ δὴ καὶ Λῆμνον. Ἐκεῖνα μὲν δὴ Ἐκαταῖος ἔλεξε, ταῦτα δὲ Ἀθηναῖοι λέγουσι.

What do you know about the Pelasgi?

παρεὸν. Illustrate this construction.

II. Comment on the following, illustrating from Herodotus:—Κλεισθένης ὁ τὰς φυλάς καὶ τὴν δημοκρατίαν Ἀθηναίοισι καταστήσας—the political settlement of countries by the Persians after conquest—θηριωδεστάτης οὐσης τῆς θαλάσσης τῆς περὶ τὸν Ἄθων—the venality of leading men in Greece—the distance from Athens to Sparta—the formation of the Greek attack at Marathon—τὸν ἐκάστη ἐθέλοι ἄνδρα ἐωυτῇ ἐκλέξασθαι, ἔδωκε τούτῳ—τὸν ἐν Ὀλυμπίῃ ἀγῶνα τιθέναι—ἢ Ἐννεάκρουνος.

FRIDAY, November 28, 1884. 2—5.

ALGEBRA.

(A)

1. SOLVE the equations:

$$(i) \quad \frac{4x+3}{9} + \frac{7x-5\frac{1}{2}}{5} = \frac{2x+11}{7} - \frac{9x-13\frac{1}{2}}{11}.$$

$$(ii) \quad (2x+1)(3x-7) + (2x-5)^2 = (5x+7)(2x-6).$$

$$(iii) \quad \begin{cases} x + \frac{y}{2} = 8, \\ \frac{x}{5} + \frac{y}{3} = 5. \end{cases}$$

$$(iv) \quad 2x^2 - 3x = 2.$$

2. The difference of the squares of two consecutive numbers is 19. Find the numbers.

3. A man at a fair spent £200 in buying sheep and oxen, purchasing in all 20 animals. If the animals that he bought had all been oxen, he would have paid £140 more than he did; if they had all been sheep he would have paid £140 less than he did. How many were there of each kind?

4. Solve the equations:

$$(i) \quad \begin{cases} \frac{3}{x} + \frac{5}{y} = 19, \\ \frac{7}{x} - \frac{9}{y} = 3. \end{cases}$$

$$(ii) \quad \frac{x+1}{x-1} + \frac{x-1}{x+1} = \frac{2x+1\frac{1}{2}}{x}.$$

$$(iii) \quad \begin{cases} bx - ay = a^2 - b^2, \\ \frac{x^2}{a^2} - \frac{y^2}{b^2} = \frac{a^2}{b^2} - \frac{b^2}{a^2}. \end{cases}$$

5. If α and β be the roots of the quadratic equation $ax^2 + bx + c = 0$, prove that $\alpha + \beta = -\frac{b}{a}$.

6. By investing a certain sum in railway shares, paying 3 per cent. per annum, at a certain rate per cent. *discount*, an income of £330 is obtained. If the same sum be invested in the shares of another railway, paying 4 per cent. per annum, at a *premium* equal to the former discount, the income is increased by £30. Find the amount invested, and the price of the shares.

7. Define *ratio*, and explain the terms *antecedent* and *consequent*.

If the ratio $a : b$ be compounded with a ratio of greater inequality, prove that the resulting ratio is greater than the ratio of $a : b$.

8. If $a : b :: c : d :: e : f$, prove that

$$a : b :: \sqrt{(ma^3 + nc^3 + pe^3)} : \sqrt{(mb^3 + nd^3 + pf^3)}.$$

9. The amount of fuel consumed in a slow-combustion stove varies as the square of the diameter of the stove, when the time for which it is kept burning is constant; and as the time for which it burns, when the diameter of the stove is constant. A stove 10 inches in diameter can be used for 21 days at a cost of 3s. 6d., what will it cost to use a stove 12 inches in diameter for 50 days?

10. Prove that, if a be the first term of an arithmetical progression, and x the common difference, the sum of n terms is $\frac{n}{2} \{2a + (n-1)x\}$.

The first term of an arithmetical series is 1, and the last is 2: the sum of the series is 18. Find the number of terms and the common difference.

11. Sum the series:

(i) $\frac{2}{3} + \frac{1}{2} + \frac{2}{3} + \frac{7}{10} + \dots$ to 20 terms.

(ii) $5 - 10 + 20 - 40 + \dots$ to 10 terms.

(iii) $3 + 2 + \frac{1}{3} + \dots$ to infinity.

12. The arithmetic mean between two numbers is 25, and the geometric mean between them is 15. Find the numbers.

FRIDAY, November 28, 1884. 2—5.

ALGEBRA.

(B)

1. SOLVE the equations:

(i) $\frac{2x+3}{8} + \frac{3x-2\frac{1}{2}}{5} = \frac{6x+7}{11} - \frac{5x-12\frac{1}{2}}{9}.$

(ii) $(7x-5)(x+2) + (3x-5)^2 = 8(2x-3)(x+1).$

(iii)
$$\begin{cases} \frac{x}{2} + \frac{y}{3} = 8, \\ \frac{x}{3} + \frac{y}{5} = 5. \end{cases}$$

(iv) $2x^2 + 3x = 2.$

2. The difference of the squares of two consecutive numbers is 17. Find the numbers.

3. A man at a fair spent £200 in buying heifers and lambs, purchasing in all 20 animals. If the animals that he bought had all been heifers, he would have paid £160 more than he did; if they had all been lambs he would have paid £160 less than he did. How many were there of each kind?

4. Solve the equations:

$$(i) \quad \begin{cases} \frac{2}{x} + \frac{7}{y} = 29, \\ \frac{5}{x} - \frac{6}{y} = 2. \end{cases}$$

$$(ii) \quad \frac{x+2}{x-2} + \frac{x-2}{x+2} = \frac{2x+5\frac{1}{2}}{x}.$$

$$(iii) \quad \begin{cases} bx + ay = a^3 + b^3, \\ \frac{x^3}{a^3} + \frac{y^3}{b^3} = \frac{b^3}{a^3} + \frac{a^3}{b^3}. \end{cases}$$

5. If α and β be the roots of the quadratic equation $ax^2 + bx + c = 0$, prove that $\alpha\beta = \frac{c}{a}$.

6. By investing a certain sum in railway shares paying 3 per cent. per annum, at a certain rate per cent. *discount*, an income of £315 is obtained. If the same sum be invested in the shares of another railway, paying 4 per cent. per annum, at a *premium* equal to the former discount, the income is increased by £65. Find the amount invested, and the prices of the shares.

7. Define *duplicate ratio* and *sub-duplicate ratio*, and prove that any ratio is the sub-duplicate ratio of its own duplicate ratio.

If $a : b$ be a ratio of greater inequality, prove that the sub-duplicate ratio of $a : b$ is less than the ratio of $a : b$.

8. If $a : b :: c : d :: e : f$, prove that

$$a : b :: \sqrt{(m^2a^2 + n^2c^2 - p^2e^2)} : \sqrt{(m^2b^2 + n^2d^2 - p^2f^2)}.$$

9. The amount of fuel consumed in a slow-combustion stove varies as the square of the diameter of the stove, when the time for which it is kept burning is constant; and as the time for which it burns, when the diameter of the stove is constant. A stove 9 inches in diameter can be used for 50 days at a cost of 6s. 9d., what will it cost to use a stove 10 inches in diameter for 48 days?

10. Prove that, if a be the first term of an arithmetical progression, and x the n^{th} term, the sum of n terms is $\frac{n}{2}(a + x)$.

The first term of an arithmetical series is 1, and the common difference is $\frac{1}{30}$. Find how many terms of this series will amount to 20.

11. Sum the series:

$$(i) \quad \frac{1}{2} + \frac{3}{8} + \frac{7}{16} + \frac{1}{8} + \dots \text{to 20 terms.}$$

$$(ii) \quad 3 - 6 + 12 - 24 + \dots \text{to 10 terms.}$$

$$(iii) \quad 3 - 2 + \frac{1}{3} - \dots \text{to infinity.}$$

12. The arithmetic mean between two numbers is 39, and the geometric mean between them is 15. Find the numbers.

SATURDAY, *November* 29, 1884. 9—12.

SHAKESPEARE'S MACBETH.

1. GIVE a quotation from the play itself and the substance of a passage from Dr Simon Forman's journal, that enable us to fix the date of the play with tolerable precision.

2. Discuss the various opinions that have been held concerning the connection between Shakespeare's *Macbeth* and Middleton's play of *The Witch*.

3. Explain the references and, where necessary, the meaning in the following passages :

- (i) My thought, whose murder yet is but fantastical
Shakes so my single state of man, that function
Is smothered in surmise, and nothing is
But what is not.
- (ii) So is he mine, and in such bloody distance
That every minute of his being thrusts
Against my near'st of life.
- (iii) This I made good to you
In our last conference, passed in probation with you,
How you were borne in hand, how crossed, the instruments
Who wrought with them.
- (iv) Come, seeling night,
Scarf up the tender eye of pitiful day,
And with thy bloody and invisible hand
Cancel and tear to pieces that great bond
Which keeps me pale.
- (v) Cruel are the times, when we are traitors
And do not know ourselves; when we hold rumour
From what we fear, yet know not what we fear,
But float upon a wild and violent sea
Each way and move.
- (vi) Now we'll together; and the chance of goodness
Be like our warranted quarrel!
- (vii) Remove from her the means of all annoyance,
And still keep eyes upon her. So, good night:
My mind she has mated, and amazed my sight.
- (viii) 'Tis his main hope;
For where there is advantage to be given,
Both more and less have given him the revolt.

4. In what meanings are the following words employed in the play—owe, pall, quell, trifled, relish, perfect, speculation?

5. Explain the following expressions: surveying vantage—the shipman's card—to alter favour—in compt—our will became the servant to defect—the valued file—a modern ecstasy—the estate of the world—trammel up the consequence.

6. Give any four expressions from *Macbeth* that have passed into proverbs.

7. Quote any one of the passages beginning

(i). Though you untie the winds and let them fight

(ii) I have lived long enough: my way of life

(iii) To-morrow, and to-morrow, and to-morrow

8. "Macbeth is the play of conscience." Shew the correctness of this criticism.

SATURDAY, *November 29, 1884.* 9—12.

SUBJECTS FOR AN ENGLISH ESSAY.

[One subject only to be taken up.]

1. Cholera, its origin and spread.
2. The advisability of a partial return to Protection.
3. Society novels.
4. The future of the British Colonies.

SATURDAY, *November 29, 1884.* 2—5.

For LATIN PROSE:

Archidamus, after ravaging the fertile Thriasian plain, in which he was but feebly opposed by a body of Athenian cavalry, proceeded to Acharnæ, one of the largest and most flourishing of the Attic boroughs, situated only about seven miles from Athens. Here he encamped on a rising ground within sight of the metropolis, and began to lay waste the country around, expecting probably by that means to provoke the Athenians to battle. But in this he was disappointed. The Athenians, indeed, and especially the Acharnians now within the walls, who had contributed no fewer than 3000 Hoplites to the army, were excited to the highest pitch of exasperation at beholding their houses, their ripening crops, their fruitful vineyards and orchards destroyed before their very eyes. Little groups might be seen gathered together in the streets angrily discussing the question of an attack, quoting oracles and prophecies which assured them of success, and indignantly denouncing Pericles as a traitor and a coward for not leading them out to battle.

PREVIOUS EXAMINATION.

FRIDAY, December 5, 1884. 12½—3.

ALGEBRA. ADDITIONAL.

(A)

1. FIND the sum of m terms of an Arithmetical Progression whose first term is a and common difference b .

2. Find the r^{th} term of a Geometrical Progression whose first term is a and n^{th} term l .

3. Find the sum of the following series:

(1) $5 + 7 + 9 + \dots$ to 20 terms.

(2) $n + \frac{2n-1}{2} + (n-1) + \dots$ to $4n$ terms.

(3) $864 + 1296 + 1944 + \dots$ to 6 terms.

(4) $8 + 6 + 4\frac{1}{2} + \dots$ to infinity.

4. The square of the mean of three numbers in Arithmetical Progression is less by 1 than the arithmetical mean of the squares of the extremes, and the cube of the mean is less by 18 than the arithmetical mean of the cubes of the extremes: find the numbers.

5. Find three numbers in Geometrical Progression such that if they be increased by 4, 7, 1 respectively, the sums form a Geometrical Progression whose common ratio is less by 1 than that of the original Progression.

6. A ship provisioned for a certain voyage encounters a storm 20 days after starting, which it is calculated will delay it for 10 days: the daily rations are therefore reduced to $\frac{2}{3}$ of the original quantity: a boat is subsequently picked up containing 10 men without provisions, in consequence of which the daily rations are reduced to $\frac{1}{3}$ of the original quantity. What was the number of men at starting and how long did the voyage last?

7. A man walks a distance of 21 miles in 6 hrs. 5 min., starting at the rate of 3 miles per hour and increasing his rate by a certain quantity after completing one-third of the distance, and again by the same quantity after completing two-thirds of the distance. What is his final rate?

What would be his final rate if he increased his rate after the expiration of each third of the time?

8. Define a logarithm, and prove that

$$(1) \log_a m^r = r \log_a m.$$

$$(2) \log_a x \log_a y \log_a z = 1.$$

If the logarithm of the first term of a G.P. be α and that of the second term β , find the logarithm of its r^{th} term.

9. Given

$$\log_{10} 432 = 2.6354837,$$

$$\log_{10} 243 = 2.3856063,$$

find $\log_{10} 324$.

10. Shew that the cube root of 19307 is very nearly ten times its tenth root, having given $\log 19307 = 4.2857290$.

FRIDAY, December 5, 1884. 12½—3.

ALGEBRA. ADDITIONAL

(B)

1. FIND the r^{th} term of an Arithmetical Progression whose first term is a and n^{th} term l .

2. Find the sum of m terms of a Geometrical Progression whose first term is a and common ratio r .

3. Find the sum of the following series:

(1) $3 + 5 + 7 + \dots$ to 21 terms.

(2) $m + \frac{3m-1}{3} + \frac{3m-2}{3} + \dots$ to $6m$ terms.

(3) $6561 + 4374 + 2916 + \dots$ to 6 terms.

(4) $9 + 6 + 4 + \dots$ to infinity.

4. The square of the mean of three numbers in Arithmetical Progression is less by 1 than the arithmetical mean of the squares of the extremes; and the cube of the mean is less by 15 than the arithmetical mean of the cubes of the extremes: find the numbers.

5. Find three numbers in Geometrical Progression such that if they be increased by 9, 11, 1 respectively, the sums form a Geometrical Progression whose common ratio is less by 1 than that of the original Progression.

6. A ship provisioned for a certain voyage, encounters a storm 16 days after starting, which it is calculated will delay it for 8 days: the daily rations are therefore reduced to $\frac{2}{3}$ of the original quantity: a boat is subsequently picked up containing 9 men without provisions, in consequence of which the daily rations are reduced to $\frac{1}{4}$ of the original quantity. What was the number of men at starting and how long did the voyage last?

7. A man walks a distance of 21 miles in 5 hrs. 37 min., starting at the rate of $3\frac{1}{2}$ miles per hour, and increasing his rate by a certain quantity after completing one-third of the distance, and again by the same quantity after completing two-thirds of the distance. What is his final rate?

What would be his final rate if he increase his rate after the expiration of each third of the time?

8. Define a logarithm, and prove that

$$(1) \quad r \log_a \sqrt[r]{m} = \log_a m.$$

$$(2) \quad \log_a a \cdot \log_a b = \log_a a.$$

If the logarithm of the first term of a G.P. be α and that of its r^{th} term be β , find the logarithm of its second term.

$$9. \text{ Given } \log_{10} 864 = 2.9365137,$$

$$\log_{10} 486 = 2.6866363,$$

find $\log_{10} 648$.

10. Shew that the square root of 372.86 is very nearly ten times its ninth root, having given $\log 37286 = 4.5714293$.

SATURDAY, December 6, 1884. 9—11½.

TRIGONOMETRY.

(A)

1. DEFINE $\sec A$ and $\cot A$, and trace the changes in sign and magnitude of $\cot A$, as A changes from 45° to 225° .

2. Explain what is meant by the circular measure of an angle. The measures of the angles of a triangle, referred to a degree, a grade, and the unit of circular measure respectively as units are in the ratio $3 : 5 : \frac{\pi}{24}$. Find the number of degrees in the angles of the triangle.

3. Prove the formulae

$$\begin{aligned}\cos(A+B) &= \cos A \cos B - \sin A \sin B, \\ \cos 3A &= 4 \cos^3 A - 3 \cos A, \\ \sin^2 A - \sin^2 B &= \sin(A+B) \sin(A-B).\end{aligned}$$

4. Find a general expression for all angles which have the same tangent, and prove that

$$\tan^{-1} \frac{1}{2} + 2 \tan^{-1} \frac{1}{3} = n\pi + \frac{\pi}{4}.$$

5. Find the values of $\sin 30^\circ$, $\cos 15^\circ$, and $\sin 18^\circ$.

6. In a plane triangle prove that

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c},$$

and prove that if b be an arithmetic mean between a and c ,

$$\tan \frac{A}{2} \cdot \tan \frac{C}{2} = \frac{1}{3}.$$

7. Assuming the expression

$$\cos A = \frac{b^2 + c^2 - a^2}{2bc},$$

prove the formula

$$\tan \frac{A}{2} = \sqrt{\frac{(s-b)(s-c)}{s(s-a)}},$$

where

$$2s = a + b + c.$$

If the sides of a triangle are 5, 6, 7, find the least angle, having given

$$\log 2 = .3010300, \quad \log 3 = .4771213.$$

$$L \tan 22^\circ 12' = 9.6107586.$$

$$L \tan 22^\circ 13' = 9.6111196.$$

8. In a plane triangle prove the formula

$$\tan \frac{A-B}{2} = \frac{a-b}{a+b} \cot \frac{C}{2}.$$

Employ the formula to find all the angles of the triangle when

$$C = 30^\circ, \quad \frac{a}{b} = \frac{2}{\sqrt{3}}.$$

SATURDAY, December 6, 1884. 9—11½.

TRIGONOMETRY.

(B)

1. DEFINE cosec A and $\tan A$, and trace the changes in sign and magnitude of $\tan A$, as A changes from 45° to 225° .

2. Explain what is meant by the circular measure of an angle.

The measures of the angles of a triangle referred to a degree, a grade and the unit of circular measure respectively as units are in the ratio $3 : 10 : \frac{\pi}{30}$. Find the number of degrees in the angles of the triangle.

3. Prove the formulae

$$\begin{aligned}\sin(A+B) &= \sin A \cos B + \cos A \sin B, \\ \sin 3A &= 3 \sin A - 4 \sin^3 A, \\ \cos^2 B - \cos^2 A &= \sin(A+B) \sin(A-B).\end{aligned}$$

4. Find a general expression for all angles which have the same tangent, and prove that

$$2 \tan^{-1} \frac{1}{2} - \tan^{-1} \frac{1}{4} = n\pi + \frac{\pi}{4}.$$

5. Find the values of $\cos 30^\circ$, $\sin 15^\circ$, and $\sin 18^\circ$.

6. When two sides of a plane triangle and angle opposite to one of the sides are given shew how to determine the remaining parts of the triangle, and explain clearly in what cases there are one, two or no solutions of the triangle. If

$$A = \sin^{-1} \frac{3}{5} \text{ and } \frac{b}{a} = \frac{5}{8},$$

shew that the other angles are 30° and $\sin^{-1} \frac{4+3\sqrt{3}}{10}$.

7. Assuming the expression

$$\cos B = \frac{a^2 + c^2 - b^2}{2ac},$$

deduce the formula

$$\tan \frac{B}{2} = \sqrt{\frac{(s-a)(s-c)}{s(s-b)}},$$

where $2s = a + b + c$.

If the sides of a triangle be 7, 8, 9, find the middle angle, having given $\log 2 = .3010300$,

$$L. \tan 29^\circ 12' = 9.7473194,$$

$$L. \tan 29^\circ 13' = 9.7476160.$$

8. In a plane triangle prove the formula

$$\tan \frac{A-C}{2} = \frac{a-c}{a+c} \cot \frac{B}{2}.$$

Employ the formula to find all the angles of the triangle when $B = 60^\circ$, $\frac{a}{c} = 2$.

SATURDAY, December 6, 1884. 12½—3.

STATICS.

(A)

1. WHAT three things are necessary to determine a force? How can a force be represented geometrically?

2. What is meant by a resultant force?

Shew that any number of forces acting at a point have one and only one resultant.

3. Enunciate the parallelogram of forces, and prove its truth for the direction of the resultant in the case of two commensurable forces.

ABC is a triangle and D the middle point of BC . If three forces represented by AB , AC , DA , act at the point A , find the magnitude and direction of their resultant.

4. Prove that if three forces acting at a point are in equilibrium each must be proportional to the sine of the angle between the other two.

Three forces of 1 lb., 2 lbs. and $\sqrt{3}$ lbs. respectively acting at a point are in equilibrium. What angles do their directions make with each other?

5. Define the moment of a force with respect to a point.

Shew that the algebraical sum of the moments of two forces, acting at a point, about any point in their plane is equal to the moment of their resultant about that point.

6. Find the centre of gravity of a uniform triangular lamina.

A parallelogram is divided into four pieces by the diagonals. One of these pieces being cut away, find the centre of gravity of the remainder.

7. A straight uniform rod is suspended from a peg by two strings attached one to each end and to the peg; their lengths being such that the angles between them and the rod are respectively 60° and 30° .

Find the tension of the strings, their weight being neglected and that of the rod being 2 lbs.

8. Find the relation of the power to the weight in a straight lever, the forces being parallel to each other.

If the arms of a common balance be unequal show how the true weight of a body may be found by weighing it first in one scale and then in the other.

9. Find the ratio of the power to the weight in that system of pulleys in which each pulley is supported by a separate string, fastened to a beam above, the strings being parallel and the weights of the pulleys all equal.

SATURDAY, December 6, 1884. 12½—3.

STATICS.

(B)

1. WHAT is meant by the tension of a string?

A string without weight passes over a smooth peg and has a weight of 1 lb. attached to each end. What is the tension of the string?

Will any alteration be made in the tension by attaching both weights to one end of the string and fastening the other end to the peg?

2. Define component and resultant forces.

Prove that if a number of forces act at a point they can only have one resultant.

3. Assuming the truth of the parallelogram of forces for the direction of the resultant, prove it for its magnitude.

At what angle must two equal forces act that their resultant may equal each of them?

4. Prove that if three forces acting at a point be represented in magnitude and direction by the sides of a triangle taken in order, they will be in equilibrium.

Two forces acting at a point at right angles to one another are kept in equilibrium by a third force making an angle of 30° with one of them. The greatest force being equal to 3 lbs., what must the other two be equal to?

5. What is the moment of a force with respect to a point?

Shew that the algebraical sum of the moments of two parallel forces about any point in their plane is equal to the moment of their resultant about that point.

6. Define the centre of gravity of a body.

Find the centre of gravity of a uniform lamina in the form of a parallelogram.

A parallelogram is divided into four parts by lines joining the middle points of the opposite sides. One of these parts being cut away, find the centre of gravity of the remainder.

7. A straight uniform rod, weighing 3 lbs., is suspended from a peg by two strings attached one to each end and to the peg. The angle between the strings is a right angle, and one of them is half the length of the rod. Neglecting the weight of the strings, find their tension.

8. Define the wheel and axle, and find the ratio of the power to the weight when they are in equilibrium.

Four wheels and axles, in each of which the radii are in the ratio of 5 to 1, are arranged so that the circumference of each axle is applied to the circumference of the next wheel. What power will balance a weight of 1875 lbs.?

9. Find the ratio of the pulley to the weight in that system of pulleys in which one end of each string is attached to the weight, the strings being parallel and the weights of the pulleys all equal.

MONDAY, December 8, 1884. 9—11½.

For candidates who are in their second or some later term of residence only.

ST MARK'S GOSPEL.

(A)

N.B.—Candidates are expected to show a competent knowledge on the whole of the paper.

I. TRANSLATE :

(a) οὐδέποτε ἀνέγνωτε τί ἐποίησε Δαβὶδ, ὅτε χρεῖαν ἔσχε καὶ ἐπείνασεν αὐτὸς καὶ οἱ μετ' αὐτοῦ; πῶς εἰσῆλθεν εἰς τὸν οἶκον τοῦ Θεοῦ ἐπὶ Ἀβιάθαρ ἀρχιερέως, καὶ τοὺς ἄρτους τῆς προθέσεως ἔφαγεν.

Parse ἐπείνασεν, ἀνέγνωτε. Explain ἐπὶ Ἀβιάθαρ ἀρχιερέως.

(b) καὶ οἱ βόσκοντες αὐτοὺς ἔφυγον, καὶ ἀπήγγειλαν εἰς τὴν πόλιν καὶ εἰς τοὺς ἀγρούς. καὶ ἦλθον ἰδεῖν τί ἐστὶ τὸ γεγονός. καὶ ἔρχονται πρὸς τὸν Ἰησοῦν, καὶ θεωροῦσι τὸν δαιμονιζόμενον καθήμενον ἱματισμένον καὶ σωφρονούμενον, τὸν ἐσχηκότα τὸν λεγεῶνα· καὶ ἐφοβήθησαν.

Parse ἐσχηκότα, ἱματισμένον. Give the name and situation of the πόλις referred to.

(c) καθ' ἡμέραν ἤμην πρὸς ὑμᾶς ἐν τῷ ἱερῷ διδάσκων, καὶ οὐκ ἐκρατήσατέ με· ἀλλ' ἵνα πληρωθῶσιν αἱ γραφαί.

Parse ἀφέντες, ἤμην. καθ' ἡμέραν... During what period was this?

II. Translate :

(a) καὶ ἔλεγεν, Οὕτως ἐστὶν ἡ βασιλεία τοῦ Θεοῦ, ὥς ἄνθρωπος βάλῃ τὸν σπόρον ἐπὶ τῆς γῆς, καὶ καθεύδῃ καὶ ἐγείρηται νύκτα καὶ ἡμέραν, καὶ ὁ σπόρος βλαστάνῃ καὶ μηκύνηται ὥς οὐκ οἶδεν αὐτός. αὐτομάτῃ ἡ γῆ καρποφορεῖ, πρῶτον χόρτον, εἶτα στάχυν, εἶτα πλήρη σίτον ἐν τῷ στάχυν. ὅταν δὲ παραδῷ ὁ καρπός, εὐθέως ἀποστέλλει τὸ δρέπανον, ὅτι παρέστηκεν ὁ θερισμός.

Parse πλήρη, βάλῃ, παραδῷ, explaining the construction. What is the subject of ἀποστέλλει?

(b) καὶ τῇ ἐπαύριον ἐξελθόντων αὐτῶν ἀπὸ Βηθανίας, ἐπείνασε. καὶ ἰδὼν συκὴν ἀπὸ μακρόθεν ἔχουσιν φύλλα, ἦλθεν εἰ ἄρα εὕρησεν τι ἐν αὐτῇ· καὶ ἐλθὼν ἐπ' αὐτήν, οὐδὲν εὗρεν εἰ μὴ φύλλα· ὁ γὰρ καιρὸς οὐκ ἦν σύκων. καὶ ἀποκριθεὶς εἶπεν αὐτῇ, Μηκέτι ἐκ σοῦ εἰς τὸν αἰῶνα μηδεὶς καρπὸν φάγοι. καὶ ἤκουον οἱ μαθηταὶ αὐτοῦ.

Parse ἐξελθόντων, φάγοι, and explain the construction.

III. Explain Βοανηργές, Καναναῖος, Ἑρωδιανοί, κολλυβισταί, κῆνσος.

Where were Γεννησαρέτ, Ἀριμαθαία?

MONDAY, December 8, 1884. 9—11½.

For candidates who are in their second or some later term of residence only.

ST MARK'S GOSPEL.

(B)

N.B.—Candidates are expected to show a competent knowledge on the whole of the paper.

I. TRANSLATE:

(a) καὶ παράγων εἶδε Λευὶν τὸν τοῦ Ἀλφαίου καθήμενον ἐπὶ τὸ τελώνιον, καὶ λέγει αὐτῷ, Ἀκολούθει μοι. καὶ ἀναστὰς ἠκολούθησεν αὐτῷ.

Parse καθήμενον, ἀναστὰς. With whom is Λευὶς generally identified, and on what grounds?

(b) καὶ ἐμβαίοντος αὐτοῦ εἰς τὸ πλοῖον παρεκάλει αὐτὸν ὁ δαιμονισθείς, ἵνα ᾗ μετ' αὐτοῦ. καὶ οὐκ ἀφῆκεν αὐτόν, ἀλλὰ λέγει αὐτῷ, Ὑπαγε εἰς τὸν οἶκόν σου πρὸς τοὺς σούς, καὶ ἀπάγγειλον αὐτοῖς ὅσα σοι ὁ Κύριος πεποίηκε, καὶ ἡλέησέ σε. καὶ ἀπῆλθε, καὶ ἤρξατο κηρύσσειν ἐν τῇ Δεκαπόλει, ὅσα ἐποίησεν αὐτῷ ὁ Ἰησοῦς· καὶ πάντες ἐθαύμαζον.

Parse ἀφῆκεν, ἡλέησε. Explain the term Δεκάπολις.

(c) βλέπετε δὲ ὑμεῖς ἑαυτοὺς· παραδώσουσι γὰρ ὑμᾶς εἰς συνέδρια, καὶ εἰς συναγωγὰς δαρήσεσθε, καὶ ἐπὶ ἡγεμόνων καὶ βασιλέων σταθήσεσθε, ἕνεκεν ἐμοῦ, εἰς μαρτύριον αὐτοῖς.

Parse δαρήσεσθε, σταθήσεσθε. Mention any fulfilment of this prediction.

II. Translate:

(a) καὶ ἔλεγε, Πῶς ὁμοιώσωμεν τὴν βασιλείαν τοῦ Θεοῦ; ἡ ἐν τίνι αὐτὴν παραβολῇ θῶμεν; ὡς κόκκῳ σινάπεως, ὃς, ὅταν σπαρῇ ἐπὶ τῆς γῆς, μικρότερον ὢν πάντων τῶν σπερμάτων τῶν ἐπὶ τῆς γῆς—καὶ ὅταν σπαρῇ, ἀναβαίνει, καὶ γίνεται μείζον πάντων τῶν λαχάνων, καὶ ποιεῖ κλάδους μεγάλους, ὥστε δύνασθαι ὑπὸ τὴν σκιὰν αὐτοῦ τὰ πετεινὰ τοῦ οὐρανοῦ κατασκηνοῦν.

Parse κόκκῳ, σπαρῇ, θῶμεν, μικρότερον, explaining the construction.

(b) οὐκ οἴδατε τί αἰτεῖσθε. δύνασθε πιεῖν τὸ ποτήριον ὃ ἐγὼ πίνω, ἡ τὸ βάπτισμα ὃ ἐγὼ βαπτίζομαι βαπτισθῆναι; οἱ δὲ εἶπον αὐτῷ, Δυνάμεθα. ὁ δὲ Ἰησοῦς εἶπεν αὐτοῖς, Τὸ ποτήριον ὃ ἐγὼ πίνω πίεσθε, καὶ τὸ βάπτισμα ὃ ἐγὼ βαπτίζομαι, βαπτισθήσεσθε· τὸ δὲ καθίσαι ἐκ δεξιῶν μου ἢ ἐξ ἐωνύμων οὐκ ἔστιν ἐμὸν δοῦναι, ἀλλ' οἷς ἡτοίμασται.

Parse βάπτισμα, ἡτοίμασται, explaining the construction.

III. Explain Ἰσκαριώτης, Συροφοίνισσα, ζύμη Ἡρώδου, σπεκουλάτωρ, κοδράντης. Where were Δαλμανουθά, Τύρος?

MONDAY, December 8, 1884. 9—11½.

For candidates who are in their first term of residence only.

ST MARK'S GOSPEL.

(A)

N.B.—Candidates are expected to show a competent knowledge on the whole of the paper.

I. TRANSLATE:

(a) ὅρα μηδενὶ μηδὲν εἶπης· ἀλλ' ὕπαγε, σεαυτὸν δείξον τῷ ἱερεῖ, καὶ προσένεγκε περὶ τοῦ καθαρισμοῦ σου ἃ προσέταξε Μωσῆς, εἰς μαρτύριον αὐτοῖς.

Explain the words εἰς μαρτύριον. Give a reason for the command ὅρα μηδενὶ κ.τ.λ. When was the contrary enjoined?

(b) καὶ ἀποκριθεὶς ὁ Πέτρος λέγει τῷ Ἰησοῦ, 'Ραββί, καλὸν ἐστὶν ἡμᾶς ὧδε εἶναι· καὶ ποιήσωμεν σκηναὶς τρεῖς, σοὶ μίαν, καὶ Μωσεὶ μίαν, καὶ Ἡλίᾳ μίαν. οὐ γὰρ ᾔδει τί ἀποκριθῇ.

Explain and illustrate the word 'Ραββί. What does σκηνή mean here and elsewhere in the New Testament?

(c) εἴ τις ἔχει ὦτα ἀκούειν ἀκουέτω. καὶ ἔλεγεν αὐτοῖς, Βλέπετε τί ἀκούετε. ἐν ᾧ μέτρῳ μετρεῖτε μετρηθήσεται ὑμῖν, καὶ προστεθήσεται ὑμῖν [τοῖς ἀκούουσιν].

How do you understand here the saying ἐν ᾧ μέτρῳ...? In what sense does it occur in St Matthew and St Luke?

(d) ὁ δὲ ἐπιστραφεὶς, καὶ ἰδὼν τοὺς μαθητὰς αὐτοῦ, ἐπετίμησε τῷ Πέτρῳ καὶ λέγει, Ὑπαγε ὀπίσω μου, Σατανᾶ· ὅτι οὐ φρονεῖς τὰ τοῦ Θεοῦ, ἀλλὰ τὰ τῶν ἀνθρώπων.

What led to this rebuke?

II. Translate:

(a) καὶ ἔλεγεν, Οὕτως ἐστὶν ἡ βασιλεία τοῦ Θεοῦ, ὡς ἄνθρωπος βάλῃ τὸν σπóρον ἐπὶ τῆς γῆς, καὶ καθεύδῃ καὶ ἐγείρηται νύκτα καὶ ἡμέραν, καὶ ὁ σπόρος βλαστάνῃ καὶ μηκύνῃται ὡς οὐκ οἶδεν αὐτός. αὐτομάτῃ ἡ γῆ καρποφορεῖ, πρῶτον χόρτον, εἶτα στάχυν, εἶτα πλήρης σίτος ἐν τῷ στάχυν. ὅταν δὲ παραδῶ ὁ καρπός, εὐθέως ἀποστέλλει τὸ δρέπανον, ὅτι παρέστηκεν ὁ θερισμός.

Parse σίτος, βίβλη, παραδῶ, explaining the construction. What is the subject of ἀποστέλλει?

(b) καὶ τῇ ἐπαύριον ἐξεληθόντων αὐτῶν ἀπὸ Βηθανίας, ἐπείνασε. καὶ ἰδὼν συκὴν ἀπὸ μακρόθεν ἔχουσιν φύλλα, ἦλθεν εἰ ἄρα εὕρησει τι ἐν αὐτῇ· καὶ ἐλθὼν ἐπ' αὐτὴν, οὐδὲν εὗρεν εἰ μὴ φύλλα· ὁ γὰρ καιρὸς οὐκ ἦν σύκων. καὶ ἀποκριθεὶς εἶπεν αὐτῇ, Μικέτι ἐκ σοῦ εἰς τὸν αἰῶνα μηδεὶς καρπὸν φάγοι. καὶ ἤκουον οἱ μαθηταὶ αὐτοῦ.

Parse ἐξεληθόντων, φαίγοι, and explain the construction.

III. Explain Βοανηργές, Καραναῖος, Ἡρωδιανοί, κολλυβισταί, κήνηες.

Where were Γεννησαρέτ, Ἀριμαθαία?

MONDAY, December 8, 1884. 9—11½.

For candidates who are in their first term of residence only.

ST MARK'S GOSPEL.

(B)

N.B.—Candidates are expected to show a competent knowledge on the whole of the paper.

I. TRANSLATE:

(a) ἀλλὰ λέγω ὑμῖν, ὅτι καὶ Ἡλίας ἐλήλυθε, καὶ ἐποίησαν αὐτῷ ὅσα ἠθέλησαν, καθὼς γέγραπται ἐπ' αὐτόν.

Explain the words καθὼς ἐπ' αὐτόν. Who was Ἡλίας? What is meant by ἐλήλυθε Ἡλίας?

(b) καὶ ἐξάγουσιν αὐτόν, ἵνα σταυρώσωσιν αὐτόν. καὶ ἀγγαρεύουσι παράγοντά τινα Σίμωνα Κυρηναῖον, ἐρχόμενον ἀπ' ἀγροῦ, τὸν πατέρα Ἀλεζάνδρου καὶ Ρούφου, ἵνα ἄρῃ τὸν σταυρὸν αὐτοῦ. καὶ φέρουσιν αὐτόν ἐπὶ Γολγοθᾶ τόπον.

Explain and illustrate the word ἀγγαρεύουσι. Give and explain the name by which Γολγοθᾶ is generally known.

(c) ...καὶ προστεθήσεται ὑμῖν [τοῖς ἀκούουσιν]. ὃς γὰρ ἔχει, δοθήσεται αὐτῷ· καὶ ὃς οὐκ ἔχει, καὶ ὃ ἔχει ἀρθήσεται ἀπ' αὐτοῦ.

How do you understand this saying? Where, and in what sense, is it found in St Matthew and St Luke?

(d) λέγει αὐτῷ εἰς τῶν μαθητῶν αὐτοῦ, Διδάσκαλε, ἴδε, ποταποὶ λίθοι καὶ ποταπαὶ οἰκοδομαί.

When and where was this uttered?

II. Translate:

(a) καὶ ἔλεγε, Πῶς ὁμοιώσωμεν τὴν βασιλείαν τοῦ Θεοῦ; ἢ ἐν τίνι αὐτὴν παραβολῇ θῶμεν; ὡς κόκκῳ σινάπεως, ὃς, ὅταν σπαρῇ ἐπὶ τῆς γῆς, μικρότερον ὢν πάντων τῶν σπερμάτων τῶν ἐπὶ τῆς γῆς, καὶ ὅταν σπαρῇ, ἀναβαίνει, καὶ γίνεται μείζον πάντων τῶν λαχάνων, καὶ ποιεῖ κλάδους μεγάλους, ὥστε δύνασθαι ὑπὸ τὴν σκιὰν αὐτοῦ τὰ πετεινὰ τοῦ οὐρανοῦ κατασκηνοῦν.

Parse κόκκῳ, σπαρῇ, θῶμεν, μικρότερον, explaining the construction.

(b) οὐκ οἴδατε τί αἰτείσθε δύνασθε πιεῖν τὸ ποτήριον ὃ ἐγὼ πίνω, ἢ τὸ βάπτισμα ὃ ἐγὼ βαπτίζομαι βαπτισθῆναι; οἱ δὲ εἶπον αὐτῷ, Δυνάμεθα. ὁ δὲ Ἰησοῦς εἶπεν αὐτοῖς, Τὸ ποτήριον ὃ ἐγὼ πίνω πίεσθε, καὶ τὸ βάπτισμα ὃ ἐγὼ βαπτίζομαι, βαπτισθήσεσθε τὸ δὲ καθίσθαι ἐκ δεξιῶν μου ἢ ἐξ ἐκωνύμων οὐκ ἔστιν ἐμὸν δοῦναι, ἀλλ' οἷς ἡτοίμασται.

Parse βάπτισμα, ἡτοίμασται, explaining the construction.

III. Explain Ἰσκαριώτης, Συροφοίνισσα, ζύμη Ἡρώδου, σπεκουλάτωρ, κοδράντης. Where were Δαλμανουθά, Τύρος?

MONDAY, December 8, 1884. 9—11½.

PLATO. APOLOGIA.

N.B.—Candidates are expected to show a competent knowledge on the whole paper.

I. TRANSLATE :

(a) ἀλλ', ὦ ἄνδρες Ἀθηναῖοι, ταυτόν μοι ἔδοξαν ἔχειν ἀμάρτημα, ὅπερ καὶ οἱ ποιηταί, καὶ οἱ ἀγαθοὶ δημιουργοί· διὰ τὸ τὴν τέχνην καλῶς ἐξεργάζεσθαι ἕκαστος ἡξίου καὶ τᾶλλα τὰ μέγιστα σοφώτατος εἶναι, καὶ αὐτῶν αὕτη ἡ πλημμέλεια ἐκείνην τὴν σοφίαν ἀπέκρυπτεν· ὥστ' ἐμὲ ἐμαυτὸν ἀνερωτῆν ὑπὲρ τοῦ χρησμοῦ, πότερα δεξαίμην ἂν οὕτως ὥσπερ ἔχω ἔχειν, μήτε τι σοφός ὢν τὴν ἐκείνων σοφίαν μήτε ἀμαθὴς τὴν ἀμαθίαν, ἢ ἀμφοτέρω δ' ἐκείνοι ἔχουσιν ἔχειν. ἀπεκρινάμην οὖν ἐμαυτῷ καὶ τῷ χρησμῷ, ὅτι μοι λυσιτελοῖ ὥσπερ ἔχω ἔχειν.

Parse ταυτόν, τᾶλλα. Explain the case of σοφώτατος. What is the χρησμός mentioned here?

(b) ἀλλὰ δὴ φυγῆς τιμήσωμαι; ἴσως γὰρ ἂν μοι τούτου τιμήσαιτε. πολλὴ μέντ' ἂν με φιλοψυχία ἔχοι, εἰ οὕτως ἀλόγιστός εἰμι, ὥστε μὴ δύνασθαι λογίζεσθαι, ὅτι ὑμεῖς μὲν ὄντες πολῖταί μου οὐχ οἰοί τε ἐγένεσθε ἐνεργεῖν τὰς ἐμὰς διατριβὰς καὶ τοὺς λόγους, ἀλλ' ὑμῖν βαρύτεραι γεγόνασιν καὶ ἐπιφθονώτεραι, ὥστε ζητεῖτε αὐτῶν νυνὶ ἀπαλλαγῆναι, ἄλλοι δὲ ἄρα αὐτὰς οἴσουσι ῥαδίως. πολλοῦ γε δεῖ, ὦ Ἀθηναῖοι. καλὸς οὖν ἂν μοι ὁ βίος εἴη ἐξελθόντι τηλικῶδε ἀνθρώπῳ ἄλλην ἐξ ἄλλης πόλιν πόλεως ἀμειβομένῳ καὶ ἐξελαυνομένῳ ζῆν.

Explain the case of φυγῆς and the voice and mood of τιμήσωμαι in the first sentence.

II. Translate :

(a) Ἀναξαγόρου οἶε κατηγορεῖν, ὃ φίλε Μέλητε, καὶ οὕτω καταφρονεῖς τῶνδε καὶ οἶε αὐτοὺς ἀπείρους γραμμάτων εἶναι, ὥστε οὐκ εἰδέναι, ὅτι τὰ Ἀναξαγόρου βιβλία τοῦ Κλαζομενίου γέμει τούτων τῶν λόγων;

Who are meant by τῶνδε? What do you know of Anaxagoras? What opinion of his is here meant? Parse οἶε.

(b) ἐγὼ γάρ, ὦ Ἀθηναῖοι, ἄλλην μὲν ἀρχὴν οὐδεμίαν πώποτε ἥρξα ἐν τῇ πόλει, ἐβούλευσα δέ· καὶ ἔτυχεν ἡμῶν ἡ φυλὴ Ἀντιοχίς πρυτανεύουσα, ὅτε ὑμεῖς τοὺς δέκα στρατηγοὺς τοὺς οὐκ ἀνελομένους τοὺς ἐκ τῆς ναυμαχίας ἐβούλεσθε ἀθρόους κρίνειν.

What is the historical allusion? Explain the case of ἀρχήν. Parse ἀνελομένους.

(c) ἀλλ' ἐγὼ διὰ παντὸς τοῦ βίου δημοσίᾳ τε, εἴ πού τι ἔπραξα, τοιοῦτος φανούμαι, καὶ ἰδίᾳ ὁ αὐτὸς οὗτος, οὐδενὶ πώποτε ξυγχωρήσας οὐδὲν παρὰ τὸ δίκαιον οὔτε ἄλλῳ οὔτε τούτων οὐδενί, οὐς οἱ διαβάλλοντές μέ φασιν ἐμούς μαθητὰς εἶναι.

What is the allusion in the last clause?

(d) καὶ οἰκεῖοί μοι εἰσι καὶ υἱεῖς, ὦ ἄνδρες Ἀθηναῖοι, τρεῖς, εἰς μὲν μεράκιον ἦδη, δύο δὲ παιδία· ἀλλ' ὅμως οὐδέν' αὐτῶν δεῦρο ἀναβιβασάμενος δεήσομαι ὑμῶν ἀποψηφίσασθαι.

What practice is here referred to? On what ground does Socrates condemn it?

MONDAY, Dec. 8, 1884. 12½—3.

This paper is for those Candidates only who are in their second or some later Term of Residence.

VIRGIL, AENEID. BOOKS IX, X.

(A)

N.B. Candidates are expected to show a competent knowledge on the whole of the paper.

I. TRANSLATE and, where necessary, explain the following passages :

- (i) undique conveniunt, quoniam data copia pugnae.
- (ii) Aenean acciri omnes, populusque patresque exposcunt, mittique viros, qui certa reportent.

In what different senses is *re* used in composition?

- (iii) quam nec duo taurea terga
nec duplici squama lorica fidelis et auro
sustinuit.

Derive *duplici*, *eminus*.

- (iv) Aeneas nubem belli, dum detonet omnis,
sustinet.

Account for the mood and for the tense of *detonet*.

What is the force of the *de* in *detonet*?

- (v) contra Tyrrhenus, ut auras
suspiciens hausit caelum, mentemque recepit.
- (vi) huic uno desectum comminus ictu
cum galea longe iacuit caput.
- (vii) haud deiectus equum duci iubet : hoc decus illi
hoc solamen erat ; bellis hoc victor abibat
omnibus.

Parse the second *hoc* and the third.

- (viii) quae tibi polliceor reduci rebusque secundis
haec eadem matrique tuae generique manebunt.

Parse *reduci* and *matri*, and state the rules which they exemplify.

- (ix) non infelicis patriae veterumque deorum
et magni Aeneae, segnes, miseretque pudetque?

Parse *deorum segnes* and *infelicis*. Give *all* the tenses of *pudet*.

- (x) namque ferunt,.....
dum canit, et maestum Musa solatur amorem,
canentem molli pluma duxisse senectam.

Parse *canentem*.

II. Translate as closely as is possible in good ENGLISH :

- (i) ille reducta
loricam clipeique ingens onus inpedit hasta ;
tum caput orantis nequiquam et multa parantis
dicere deturbat terrae, truncumque tepentem
provolvens super *haec* inimico pectore fatur :
istic nunc, metuende, iace. non te optuma mater
condet humo, patrioque onerabit membra sepulchro :
alitibus *linquere* feris, aut *gurgite* mersum
unda feret, piscesque *inpasti* volnera lambent.

- (ii) desiluit Turnus biiugis; *pedes* apparat ire
comminus. utque leo, specula cum vidit ab alta
stare procul campis meditantem in proelia taurum,
advolat: haud alia est Turni venientis imago.
hunc ubi contiguum missae fore credidit hastae,
ire prior Pallas, si qua fors *adiuvet* ausum
viribus imparibus, magnumque ita ad aethera fatur.
- (iii) hos parere iubent Alpheae ab origine Pisae,
urbs Etrusca solo. sequitur pulcherrimus Astyr,
Astyr equo fidens et versicoloribus *armis*.
ter centum adiiciunt,—mens omnibus una sequendi—
qui Caerete domo, qui sunt Minionis in arvis,
et Pyrgi veteres, intempestaeque Graviscae....
hinc quoque quingentos in *se* Mezentius armat,
quos patre Benaco velatus arundine glauca
Mincius infesta ducebat in aequora pinu.

III. Explain clearly, in order, the historical and geographical allusions in question II, and also those in the following passages (*without translating them*), taking particular care to define as closely as possible the position of the places mentioned.

- (i) magna dicione iubeto
Karthago premat Ausoniam: nihil urbibus inde
obstabit Tyriis.
- (ii) adsueti longo muros defendere bello.
- (iii) Pactolusque inrigat auro.

What district is alluded to?

- (iv) quid repetam exustas Erycino in litore classis?
- (v) in Euboico Baiarum litore.

IV. Parse fully, in order, the words in italics in question II., and state the rules which they exemplify.

Where were Helicon, Oricus, Strymon, Paphus, Argos?

MONDAY, Dec. 8, 1884. 12½—3.

This paper is for those Candidates only who are in their second or some later Term of Residence.

VIRGIL, AENEID. BOOKS IX. X.

(B)

N.B. Candidates are expected to show a competent knowledge on the whole of the paper.

I. TRANSLATE and, where necessary, explain the following passages:

- (i) incipe, si qua animo virtus, et consere dextram.
- (ii) qua globus ille virum densissimus urget,
hac vos et Pallanta ducem patria alta reposit.

In what different senses is *re* used in composition?

- (iii) illa per orbem
aere cavum triplici, per linea terga, tribusque
transiit intextum tauris opus.

Derive *triplici*, *comminus*.

- (iv) socii magno clamore sequuntur,
dum genitor nati parma protectus abiret.

Account for the mood and for the tense of *abiret*.

- (v) sic toto Aeneas desaevit in aequore victor,
ut semel intepuit mucro.

What is the force of *de* in *desaevit*?

- (vi) ille pedem referens et inutilis inque ligatus
cedebat, clipeoque inimicum hastile trahebat.
- (vii) haud deiectus equum duci iubet. hoc decus illi,
hoc solamen erat; bellis hoc victor abibat
omnibus.

Parse the first *hoc* and the third.

- (viii) quae tibi polliceor reduci rebusque secundis
haec eadem matrique tuae generique manebunt.

Parse *reduci* and *generi*, and state the rules which they exemplify.

- (ix) non infelicis patriae veterumque deorum
et magni Aeneae, segnes, miseretque pudetque?

Parse *patriae segnes* and *veterum*. Give *all* the tenses of *miseret*.

- (x) fata canens silvis genitor celarat Halaesum
ut senior leto canentia lumina solvit.

Parse *canentia*.

II. Translate as closely as is possible in good English:

- (i) si vero capere Italiam sceptrisque potiri
contigerit victori, et praedae *dicere* sortem:
vidisti, quo Turnus equo, quibus ibat in armis
aureus; ipsum illum, clipeum cristasque rubentis
excipiam sorti, iam nunc tua *praemia*, Nise.
praeterea bis sex genitor lectissima matrum
corpora captivosque dabit, suaque omnibus arma;
insuper his, *campi* quod rex habet ipse Latinus.
- (ii) talis in Euboico Baiarum litore quondam
saxea pila cadit, magnis quam *molibus* ante
constructam ponto iaciunt: sic illa ruinam
prona trahit, penitusque vadis *inlisa* recumbit;
miscent *se* maria, et nigrae attolluntur arenae;
tum sonitu Prochyta alta tremit, durumque cubile
Inarime Iovis inperiis inposta Typhoeo.
- (iii) Massicus aerata princeps secatur aequora Tigri;
sub quo mille manus iuvenum, qui moenia Clusi,
quique urbem *liquere* Cosas; *quis* tela sagittae
gorytique leves humeris et letifer arcus.
una torvus Abas; huic totum insignibus *armis*
agmen et aurato fulgebat Apolline puppis.
sexcentos illi dederat Populonia mater
expertos belli iuvenes; ast Ilva trecentos,
insula inexhaustis Chalybum generosa metallis.

III. Explain clearly, in order, the historical and geographical allusions in question II, and also those in the following passages (*without translating them*), taking particular care to define as closely as possible the position of the places mentioned:

- (i) cum fera Karthago Romanis arcibus olim
exitium magnum atque Alpes inmittet apertas.
- (ii) quid pestem evadere belli
iuvat?
- (iii) Maeonia genere domo.

What river waters the region alluded to?

- (iv) hinc nomen Campanae ducitur urbi.

IV. Parse fully, in order, the words in *italics* in question II., and state the rules which they exemplify.

Where were Vesulus, Lyrnesus, Symaethus, Amathus, Mycenae?

MONDAY, Dec. 8, 1884. 12½—3.

This paper is for those Candidates only who are in their first Term of Residence.

VIRGIL, AENEID. BOOKS IX., X. (A)

N.B. Candidates are expected to show a competent knowledge on the whole of the paper.

I. TRANSLATE and, where necessary, explain the following passages :

(i) undique conveniunt, quoniam data copia pugnae.

(ii) Aeneas acciri omnes, populusque patresque
exposcunt, mittique viros, qui certa reportent.

In what different senses is *re* used in composition?

(iii) quam nec duo taurea terga
nec duplici squama lorica fidelis et auro
sustinuit.

Derive *duplici*, *eminus*.

(iv) Aeneas nubem belli, dum detonet omnis,
sustinet.

Account for the mood and for the tense of *detonet*.

What is the force of the *de* in *detonet*?

(v) contra Tyrrhenus, ut auras
suspiciens hausit caelum, mentemque recepit.

(vi) huic uno desectum comminus ictu
cum galea longe iacuit caput.

(vii) haud deiectus equum duci iubet: hoc decus illi
hoc solamen erat; bellis hoc victor abibat
omnibus.

Parse the second *hoc* and the third.

(viii) quae tibi polliceor reduci rebusque secundis
haec eadem matrique tuae generique manebunt.

Parse *reduci* and *matri*, and state the rules which they exemplify.

(ix) non infelicis patriae veterumque deorum
et magni Aeneae, segnes, miseretque pudetque?

Parse *deorum segnes* and *infelicis*. Give *all* the tenses of *pudet*.

(x) namque ferunt,.....
dum canit, et maestum Musa solatur amorem,
canentem molli pluma duxisse senectam.

Parse *canentem*.

II. Translate as closely as is possible in good ENGLISH :

- (i) ille reducta
loricam clipeique ingens onus inpedit hasta;
tum caput orantis nequiquam et multa parantis
dicere deturbat terrae, truncumque tepentem
provolvens super haec inimico pectore fatur:
istic nunc, metuende, iace. non te optuma mater
condet humo, patrioque onerabit membra sepulchro:
alitibus linquere feris, aut gurgite mersum
unda feret, piscesque inpasti volnera lambent.
- (ii) desiluit Turnus biiugis; pedes apparat ire
comminus. utque leo, specula cum vidit ab alta
stare procul campis meditantem in proelia taurum,
advolat: haud alia est Turni venientis imago.
hunc ubi contiguum missae fore credidit hastae,
ire prior Pallas, si qua fors adiuvet ausum
viribus inparibus, magnumque ita ad aethera fatur.
- (iii) hos parere iubent Alphea ab origine Pisae,
urbs Etrusca solo. sequitur pulcherrimus Astyr,
Astyr equo fidens et versicoloribus armis.
ter centum adiciunt,—mens omnibus una sequendi—
qui Caerete domo, qui sunt Minionis in arvis,

et Pyrgi veteres, intempestaeque Graviscae...
hinc quoque quingentos in se Mezentius armat,
quos patre Benaco velatus arundine glauca
Mincius infesta ducebat in aequora pinu.

III. Explain clearly, in order, the historical and geographical allusions in question II, and also those in the following passages (*without translating them*), taking particular care to define as closely as possible the position of the places mentioned.

(i) magna dicione iubeto
Karthago premat Ausoniam: nihil urbibus inde
obstabit Tyriis.

(ii) adsueti longo muros defendere bello.

(iii) Pactolusque inrigat auro.

What district is alluded to?

(iv) quid repetam exustas Erycino in litore classis?

(v) in Euboico Baiarum litore.

IV. Explain the connection in which the following passages occur:

(i) audentis Fortuna iuvat.

(ii) arma quibus laetatus, habe tua.

(iii) causas nequiquam nectis inanis.

(iv) nulla hinc exire potestas.

(v) luce palam certum est igni circumdare muros.

Explain the mythological allusions in:

(vi) ille tamen nostra deducit origine nomen,
Pilumnusque illi quartus pater.

(vii) quod tua cara parens domito te poscit Olympo.

(viii) proque viro nebulam et ventos obtendere inanis.

(ix) una sub nocte iugali

caesa manus iuvenum foede, thalamique cruenti.

(x) at Messapus equum domitor, Neptunia proles.

MONDAY, Dec. 8, 1884. 12½—3.

This paper is for those Candidates only who are in their first Term of Residence.

VIRGIL, AENEID. BOOKS IX. X.

(B)

N.B. Candidates are expected to show a competent knowledge on the whole of the paper.

I. TRANSLATE and, where necessary, explain the following passages:

(i) incipe, si qua animo virtus, et consere dextram.

(ii) qua globus ille virum densissimus urget,
hac vos et Pallanta ducem patria alta reposcit.

In what different senses is *re* used in composition?

(iii) illa per orbem
aere cavum triplici, per linea terga, tribusque
transiit intextum tauris opus.

Derive *triplici*, *comminus*.

(iv) socii magno clamore sequuntur,
dum genitor nati parma protectus abiret.

Account for the mood and for the tense of *abiret*.

(v) sic toto Aeneas desaevit in aequore victor,
ut semel intepuit mucro.

What is the force of *de* in *desaevit*?

(vi) ille pedem referens et inutilis inque ligatus
cedebat, clipeoque inimicum hastile trahebat.

(vii) haud deiectus equum duci iubet. hoc decus illi,
hoc solamen erat; bellis hoc victor abibat
omnibus.

Parse the first *hoc* and the third.

(viii) quae tibi polliceor reduci rebusque secundis
haec eadem matricum tuarum generique manebunt.

Parse *reduci* and *generi*, and state the rules which they exemplify.

- (ix) non infelicis patriae veterumque deorum
et magni Aeneae, segnes, miseretque pudetque?
Parse *patriae segnes* and *veterum*. Give *all* the tenses of *miseret*.
- (x) fata canens silvis genitor celarat Halaesum
ut senior leto canentia lumina solvit.
Parse *canentia*.

II. Translate as closely as is possible in good English:

- (i) si vero capere Italiam sceptrisque potiri
contigerit victori, et praedae dicere sortem:
vidisti, quo Turnus equo, quibus ibat in armis
aureus; ipsum illum, clipeum cristasque rubentis
excipiam sorti, iam nunc tua praemia, Nise.
praeterea bis sex genitor lectissima matrum
corpora captivosque dabit, suaeque omnibus arma;
insuper his, campi quod rex habet ipse Latinus.
- (ii) talis in Euboico Baiarum litore quondam
saxea pila cadit, magnis quam molibus ante
constructam ponto iaciunt: sic illa ruinam
prona trahit, penitusque vadis inlisa recumbit;
miscent se maria, et nigrae attolluntur arenae;
tum sonitu Prochyta alta tremit, durumque cubile
Inarime Iovis inperiis inposta Typhoeo.
- (iii) Massicus aerata princeps secatur aequora Tigri;
sub quo mille manus iuvenum, qui moenia Clusi,
quique urbem liquere Cosas; quis tela sagittae
gorytique leves humeris et letifer arcus.
una torvus Abas; huic totum insignibus armis
agmen et aurato fulgebat Apolline puppis.
sexcentos illi dederat Populonia mater
expertos belli iuvenes; ast Ilva trecentos,
insula inexhaustis Chalybum generosa metallis.

III. Explain clearly, in order, the historical and geographical allusions in question II, and also those in the following passages (*without translating them*), taking particular care to define as closely as possible the position of the places mentioned:

- (i) cum fera Karthago Romanis arcibus olim
exitium magnum atque Alpes inmittet apertas.
- (ii) quid pestem evadere belli
invit?
- (iii) Maeonia generose domo.

What river waters the region alluded to?

- (iv) hinc nomen Campanae ducitur urbi.

IV. Explain the connection in which the following passages occur:

- (i) in manibus Mars ipse viris.
(ii) fallit te incautum pietas tua.
(iii) hanc sine me spem ferre tui.
(iv) non haec dotalis regia Amatae.
(v) en qui nostra sibi bello conubia poscunt.
- Explain the mythological allusions in:
- (vi) luco tum forte parentis
Pilumni Turnus sacrata valle sedebat.
- (vii) haec intemptata manebat
sors rerum.
- (viii) equidem credo, mea volnera restant.
(ix) centum cui brachia dicunt
centenasque manus.
- (x) Alcidae comes usque gravis dum terra labores
praebuit.

TUESDAY, December 9, 1884. 9—11½.

Only for Candidates who are in their second or some later Term of Residence.

PLUTARCH. THEMISTOCLES.

(A)

Candidates are expected to show a competent knowledge on the whole of the paper.

I. TRANSLATE:

(a) σύντονον δὲ αὐτὸν γεγονέναι χρηματιστὴν οἱ μὲν τινὲς φασὶ δι' ἐλευθεριότητα· καὶ γὰρ φιλοθύτην ὄντα καὶ λαμπρὸν ἐν ταῖς περὶ τοὺς ξένους δαπάναις ἀφθόνου δεῖσθαι χορηγίας· οἱ δὲ τούναντίον γλισχρότητα πολλὴν καὶ μικρολογία κατηγοροῦσιν, ὥς καὶ τὰ πεμπόμενα τῶν ἐδωδύμων πωλοῦντος. ἐπεὶ δὲ Φιλίδης ὁ ἵπποτρόφος αἰτηθεὶς ὑπ' αὐτοῦ πῶλον οὐκ ἔδωκεν, ἠπείλησε τὴν οἰκίαν αὐτοῦ ταχὺ ποιήσιν δούρειον ἵππον, αἰνιξάμενος ἐγκλήματα συγγενικὰ καὶ δίκας τῷ ἀνθρώπῳ πρὸς οἰκείους τινὰς ταραξέιν.

Parse in the preceding passage the following words explaining their construction:

χορηγίας, γλισχρότητα, κατηγοροῦσιν, πωλοῦντος, ἐγκλήματα.

(b) οὐ μὴν ἀλλ' εἰς ὄψιν ἐλθόντος αὐτοῦ καὶ πάλιν προσκυνήσαντος, ἀσπασάμενος καὶ προσειπὼν φιλοφρόνως ὁ βασιλεὺς, ἥδη μὲν ἔφησεν αὐτῷ διακόσια τάλαντα ὀφείλειν· κομίσαντα γὰρ αὐτὸν ἀπολήψεσθαι δικαίως τὸ ἐπικηρυχθὲν τῷ ἀγαγόντι. πολλῷ δὲ πλείω τούτων ὑπισχνεῖτο καὶ παρεθάρρυνε καὶ λέγειν ἐδίδου περὶ τῶν Ἑλληνικῶν ἃ βούλοιο παρρησιαζόμενον. ὁ δὲ Θεμιστοκλῆς ἀπεκρίνατο, τὸν λόγον εἰκέναι τοῦ ἀνθρώπου τοῖς ποικίλοις στρώμασιν· ὥς γὰρ ἐκεῖνα καὶ τούτον ἐκτεινόμενον μὲν ἐπιδεικνύναι τὰ εἶδη, συσσελλόμενον δὲ κρύπτειν καὶ διαφθεῖρειν· ὅθεν αὐτῷ χρόνου δεῖν.

Parse *κομίσαντα, αὐτόν, πλείω, στρώμασιν, ἐκεῖνα*, explaining their construction.

II. (a) Who were Pericles, Aeacus, Arthmius, Theopompus, Hiero?

(b) Where were Acharnae, Laurium, Salamis, Thebes, Sardis?

(c) Translate and explain where necessary:

οὐ Δαρεῖον ἐπισείων—τὸ βῆμα τὸ ἐν Πνυκί—ἐν τοῖς Ἀμφικτυονικοῖς συνεδρίοις—οἱ μαγικοὶ λόγοι—ἐν τοῖς περὶ Πλούτου.

III. Translate:

(a) καίτοι Στησίμβροτος Ἀναξαγόρου τε διακοῦσαι τὸν Θεμιστοκλέα φησὶ καὶ περὶ Μέλισσον σπουδάσαι τὸν φυσικόν, οὐκ εἰ τῶν χρόνων ἀπτόμενος.

Parse *σπουδάσαι, χρόνων*. Who was Anaxagoras?

(b) ὥς που καὶ πρὸς Σιμωνίδην τὸν Κεῖον εἰπεῖν αἰτούμενόν τι τῶν οὐ μετρίων παρ' αὐτοῦ στρατηγούντος, ὥς οὐτ' ἐκεῖνος ἂν γένοιτο ποιητῆς ἀγαθὸς ᾄδων παρὰ μέλος, οὐτ' αὐτὸς ἀστείος ἄρχων παρὰ νόμον χαριζόμενος.

Who was Simonides? Explain Κεῖον. Parse αἰτούμενον, τι.

(c) ἐν δὲ τούτῳ τοῦ ἀγῶνος ὄντος φῶς μὲν ἐκλάμψαι μέγα λέγουσιν Ἐλευσινόθεν, ἦχον δὲ καὶ φωνὴν τὸ Θριάσιον κατέχειν πεδῖον ἄχρι θαλάττης, ὥς ἀνθρώπων ὁμοῦ πολλῶν τὸν μυστικὸν ἐξαγόντων Ἴακχον.

Where was Eleusis? Who was Iacchus? Parse φῶς, θαλάττης.

(d) Θουκυδίδης δὲ καὶ πλεῦσαι φησιν αὐτὸν ἐπὶ τὴν ἑτέραν καταβάντα θάλασσαν ἀπὸ Πύδνης, οὐδενὸς εἰδότος ὅστις εἴη τῶν πλεόντων, μέχρι οὗ πνεύματι τῆς ὀλκάδος εἰς Νάξον καταφερομένης ὑπὸ Ἀθηναίων πολιορκουμένην τότε φοβηθεὶς ἀναδείξειεν ἑαυτὸν τῷ ναυκλήρῳ.

Where were the places mentioned? Parse πλεῦσαι, εἰδότος.

(e) τὴν δ' αἰτίαν τοῦ θανάτου καὶ τὸν τρόπον πυθόμενον βασιλεία λέγουσιν ἔτι μᾶλλον θαυμάσαι τὸν ἄνδρα, καὶ τοῖς φίλοις αὐτοῦ καὶ οἰκείοις χρέμενον διατελεῖν φιλανθρώπως.

Parse ἄνδρα, οἰκείοις.

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PLUTARCH. THEMISTOCLES.

(B)

Candidates are expected to show a competent knowledge on the whole of the paper.

I. TRANSLATE:

(a) αἱ δὲ γενόμεναι τότε πρὸς τὰς τῶν βαρβάρων ναῦς περὶ τὰ στενὰ μάχαι κρίσιν μὲν εἰς τὰ ὅλα μεγάλην οὐκ ἐποίησαν, τῇ δὲ πείρᾳ μέγιστα τοὺς Ἕλληνας ὤνησαν, ὑπὸ τῶν ἔργων παρὰ τοὺς κινδύνους διδαχθέντας, ὥς οὔτε πλήθη νεῶν οὔτε κόσμοι καὶ λαμπρότητες ἐπισήμων οὔτε κραυγαὶ κομπῶδεις ἢ βάρβαροι παιᾶνες ἔχουσί τι δεινὸν ἀνδράσιν ἐπισταμένοις εἰς χεῖρας ἰέναι καὶ μάχεσθαι τολμῶσιν, ἀλλὰ δεῖ τῶν τοιούτων καταφρονούντας ἐπ' αὐτὰ τὰ σώματα φέρεσθαι καὶ πρὸς ἐκεῖνα διαγωνίζεσθαι συμπλακέντας.

Parse in the preceding passage the following words explaining their construction:

κρίσιν, μέγιστα, νεῶν, ἰέναι, τολμῶσιν.

(b) καὶ μετὰ ταῦτα κοιμηθεὶς ὁ Θεμιστοκλῆς ὄναρ ἔδοξεν ἰδεῖν δράκοντα κατὰ τῆς γαστροῦς αὐτοῦ περιελιττόμενον καὶ προσανέρποντα τῷ τραχήλῳ· γενόμενον δ' αἰετόν, ὥς ἦψατο τοῦ προσώπου, περιβαλόντα τὰς πτέρυγας ἐξᾶραι καὶ κομίζειν πολλὴν ὁδόν, εἶτα χρυσοῦ τινὸς κηρυκείου φανέντος, ἐπὶ τούτῳ

στήσαι βεβαίως αὐτὸν ἀμηχάνου δέματος καὶ ταραχῆς ἀπαλλαγέντα. πέμπεται δ' οὖν ὑπὸ τοῦ Νικογένους μηχανησαμένου τι τοιόνδε. τοῦ βαρβαρικοῦ γένους τὸ πολὺ καὶ μάλιστα τὸ Περσικὸν εἰς ζήλοτυπίαν τὴν περὶ τὰς γυναῖκας ἄγριον φύσει καὶ χαλεπὸν ἐστίν.

Parse *ὄναρ, γενόμενον, αὐτόν, γένους, ἄγριον*, explaining their construction.

II. (a) Who were Leonidas, Demaratus, Timocreon, Herodotus, Eurybiades?

(b) Where were Aegina, Troezen, Lampsacus, Eretria, Naxos?

(c) Translate and explain where necessary:

μεθ' ἡμέραν—ἐμφῦναι ταῖς ναῦσι—χρηματίζεσθαι—ἀφήκε τὴν λεωφόρον—Ἀρτάβανος ὁ χιλιάρχος.

III. Translate:

(a) Περικλεῖ γάρ, ὃς πολὺ νεώτερος ἦν Θεμιστοκλέους, Μέλισσος μὲν ἀντεστρατήγει πολιορκοῦντι Σαμίους, Ἀναξαγόρας δὲ συνδιέτριβε. μᾶλλον οὖν ἂν τις προσέχοι τοῖς Μνησιφίλου τὸν Θεμιστοκλέα τοῦ Φρεαρρίου ζήλωτὴν γενέσθαι λέγουσιν.

Who was Mnesiphilus? Where was Samos? Parse Περικλεῖ, Μνησιφίλου.

(b) εἰς δ' Ὀλυμπίαν ἐλθὼν καὶ διαμιλλώμενος τῷ Κίμωνι περὶ δεῖπνα καὶ σκηναὶς καὶ τὴν ἄλλην λαμπρότητα καὶ παρασκευήν, οὐκ ἤρεσκε τοῖς Ἑλλησιν.

Where was Olympia? Who was Cimon? Parse σκηναὶς, Ἑλλησιν.

(c) περὶ δὲ τοῦ πλήθους τῶν βαρβαρικῶν νεῶν Αἰσχύλος ὁ ποιητὴς ὥς ἂν εἰδὼς καὶ διαβεβαιούμενος ἐν τραγῳδίᾳ Πέρσαις λέγει ταῦτα.

Ξέρξῃ δὲ, καὶ γὰρ οἶδα, χιλιάς μὲν ἦν
ὧν ἦγε πλῆθος· αἱ δ' ὑπέρκοποι τάχει
ἐκατὸν δὲ ἦσαν ἑπτὰ θ'. ὧδ' ἔχει λόγος.

Parse Πέρσαις, πλῆθος.

(d) προαισθόμενος δ' ἐκεῖνος εἰς Κέρκυραν διεπέρασεν, οὔσης αὐτῷ πρὸς τὴν πόλιν εὐεργεσίας. γενόμενος γὰρ αὐτῶν κριτὴς πρὸς Κορινθίους ἐχόντων διαφοράν, ἔλυσε τὴν ἔχθραν εἴκοσι τάλαντα κρίνας τοὺς Κορινθίους καταβαλεῖν καὶ Λευκάδα κοινῇ νέμειν ἀμφοτέρων ἄποικον.

Where were Corcyra, Leucas? Parse εὐεργεσίας, τάλαντα.

(e) οὐ γὰρ πλανώμενος περὶ τὴν Ἀσίαν, ὥς φησι Θεόπομπος, ἀλλ' ἐν Μαγνησίᾳ μὲν οἰκῶν, καρπούμενος δὲ δωρεὰς μεγάλας καὶ τιμώμενος ὅμοια Περσῶν τοῖς ἀρίστοις, ἐπὶ πολὺν χρόνον ἀδεῶς διῆγεν.

Who was Theopompus? Where was Magnesia? Parse ὅμοια.

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PLUTARCH. THEMISTOCLES.

(A)

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I. TRANSLATE:

(a) σύντονον δὲ αὐτὸν γεγονέναι χρηματιστὴν οἱ μὲν τινὲς φασὶ δι' ἐλευθεριότητα· καὶ γὰρ φιλοθύτην ὄντα καὶ λαμπρὸν ἐν ταῖς περὶ τοὺς ξένους δαπάναις ἀφθόνου δεῖσθαι χορηγίας· οἱ δὲ τούναντίον γλισχρότητα πολλὴν καὶ μικρολογίαν κατηγοροῦσιν, ὥς καὶ τὰ πεμπόμενα τῶν ἐδωδίων πωλοῦντος. ἐπεὶ δὲ Φιλίδης ὁ ἵπποτρόφος αἰτηθεὶς ὑπ' αὐτοῦ πῶλον οὐκ ἔδωκεν, ἠπείλησε τὴν οἰκίαν αὐτοῦ ταχὺ ποιῆσειν δούρειον ἵππον, αἰνιξάμενος ἐγκλήματα συγγενικὰ καὶ δίκας τῷ ἀνθρώπῳ πρὸς οἰκείους τινὰς ταράζειν.

Parse in the preceding passage the following words explaining their construction:

χορηγίας, γλισχρότητα, κατηγοροῦσιν, πωλοῦντος, ἐγκλήματα.

(b) οὐ μὴν ἀλλ' εἰς ὄψιν ἐλθόντος αὐτοῦ καὶ πάλιν προσκυνήσαντος, ἀσπασάμενος καὶ προσειπὼν φιλοφρόνως ὁ βασιλεὺς, ἥδη μὲν ἔφησεν αὐτῷ διακόσια τάλαντα ὀφείλειν· κομίσαντα γὰρ αὐτὸν ἀπολήψεσθαι δικαίως τὸ ἐπικηρυχθέν τῷ ἀγαγόντι· πολλῷ δὲ πλείω τούτων ὑπισχνεῖτο καὶ παρεθάρρυνε καὶ λέγειν ἐδίδου περὶ τῶν Ἑλληνικῶν ἃ βούλοιο παρρησιαζόμενον. ὁ δὲ Θεμιστοκλῆς ἀπεκρίνατο, τὸν λόγον εἰκέναι τοῦ ἀνθρώπου τοῖς ποικίλοις στρώμασιν· ὥς γὰρ ἐκεῖνα καὶ τοῦτον ἐκτεινόμενον μὲν ἐπιδεικνύναι τὰ εἶδη, συστελλόμενον δὲ κρύπτειν καὶ διαφθεῖρειν· ὅθεν αὐτῷ χρόνου δεῖν.

Parse *κομίσαντα, αὐτόν, πλείω, στρώμασιν, ἐκεῖνα*, explaining their construction.

II. (a) Who were Pericles, Aeacus, Arthmius, Theopompus, Hiero?

(b) Where were Acharnae, Laurium, Salamis, Thebes, Sardis?

(c) Translate and explain where necessary:

οὐ Δαρεῖον ἐπισείων—τὸ βῆμα τὸ ἐν Πνυκί—ἐν τοῖς Ἀμφικτυονικοῖς συνεδρίοις—οἱ μαγικοὶ λόγοι—ἐν τοῖς περὶ Πλούτου.

III. Translate:

(a) καίτοι Σπησίμβροτος Ἀναξαγόρου τε διακοῦσαι τὸν Θεμιστοκλέα φησὶ καὶ περὶ Μέλισσον σπουδάσαι τὸν φυσικόν, οὐκ εὖ τῶν χρόνων ἀπτόμενος.

Explain τὸν φυσικόν.

How does Plutarch show οὐκ εὖ τῶν χρόνων ἀπτόμενος?

(b) αἱ δὲ γινόμεναι τότε πρὸς τὰς τῶν βαρβάρων ναῦς περὶ τὰ στενὰ μάχαι κρίσιν μὲν εἰς τὰ ὅλα μεγάλην οὐκ ἐποίησαν, τῇ δὲ πείρᾳ μέγιστα τοὺς Ἕλληνας ὤνησαν, ὑπὸ τῶν ἔργων παρὰ τοὺς κινδύνους διδαχθέντας.

What engagement is alluded to? What did the Greeks learn from it?

(c) γράφει ψήφισμα, τοῖς ἐπὶ χρόνῳ μεθεστῶσιν ἐξεῖναι κατελθοῦσι πράττειν καὶ λέγειν τὰ βέλτιστα τῇ Ἑλλάδι μετὰ τῶν ἄλλων πολιτῶν.

Explain the circumstances. Parse κατελθοῦσι.

(d) τὸν μὲν οὖν ἐξοστρακισμὸν ἐποίησαντο κατ' αὐτοῦ κολούοντες τὸ ἀξίωμα καὶ τὴν ὑπεροχὴν, ὥσπερ εἰώθεσαν ἐπὶ πάντων οὓς ᾤοντο τῇ δυνάμει βαρεῖς καὶ πρὸς ἰσότητα δημοκρατικὴν ἀσυμμέτρους εἶναι.

Who is spoken of? How had he offended his fellow countrymen?

(e) Δημάρατος ὁ Σπαρτιάτης αἰτήσασθαι δωρεὰν κελευσθεὶς ᾔτήσατο τὴν κίταριν, ὥσπερ οἱ βασιλεῖς, ἐπαιρόμενος εἰσελάσαι διὰ Σάρδεων.

What reply was made to this request?

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PLUTARCH. THEMISTOCLES.

(B)

Candidates are expected to show a competent knowledge on the whole of the paper.

I. TRANSLATE:

(a) αἱ δὲ γινόμεναι τότε πρὸς τὰς τῶν βαρβάρων ναῦς περὶ τὰ στενὰ μάχαι κρίσιν μὲν εἰς τὰ ὅλα μεγάλην οὐκ ἐποίησαν, τῇ δὲ πείρᾳ μέγιστα τοὺς Ἕλληνας ὤνησαν, ὑπὸ τῶν ἔργων παρὰ τοὺς κινδύνους διδαχθέντας, ὥς οὔτε πλήθη νεῶν οὔτε κόσμοι καὶ λαμπρότητες ἐπισήμων οὔτε κραυγαὶ κομπῶδεις ἢ βάρβαροι παιᾶνες ἔχουσί τι δεινὸν ἀνδράσιν ἐπισταμένοις εἰς χεῖρας ἰέναι καὶ μάχεσθαι τολμῶσιν, ἀλλὰ δεῖ τῶν τοιούτων καταφρονούντας ἐπ' αὐτὰ τὰ σώματα φέρεσθαι καὶ πρὸς ἐκείνα διαγωνίζεσθαι συμπλακέντας.

Parse in the preceding passage the following words explaining their construction:

κρίσιν, μέγιστα, νεῶν, ἰέναι, τολμῶσιν.

(b) καὶ μετὰ ταῦτα κοιμηθεὶς ὁ Θεμιστοκλῆς ὄναρ ἔδοξεν ἰδεῖν δράκοντα κατὰ τῆς γαστροῦς αὐτοῦ περιελιττόμενον καὶ προσανέρποντα τῷ τραχήλῳ γινόμενον δ' αἰτόν, ὡς ἦψατο τοῦ προσώπου, περιβαλόντα τὰς πτέρυγας ἐξᾶραι καὶ κομίζειν πολλὴν ὁδόν, εἴτα χρυσοῦ τινὸς κηρυκείου φανέντος, ἐπὶ τούτου

στῆσαι βεβαίως αὐτὸν ἀμηχάνου δείματος καὶ ταραχῆς ἀπαλλαγέντα. πέμπεται δ' οὖν ὑπὸ τοῦ Νικογένους μηχανησαμένου τι τοιόνδε. τοῦ βαρβαρικοῦ γένους τὸ πολὺ καὶ μάλιστα τὸ Περσικὸν εἰς ζήλοτυπίαν τὴν περὶ τὰς γυναῖκας ἄγριον φύσει καὶ χαλεπὸν ἐστίν.

Parse *ἄναρ*, *γενόμενον*, *αὐτόν*, *γένους*, *ἄγριον*, explaining their construction.

II. (a) Who were Leonidas, Demaratus, Timocreon, Herodotus, Eurybiades?

(b) Where were Aegina, Troezen, Lampsacus, Eretria, Naxos?

(c) Translate and explain where necessary:

μεθ' ἡμέραν—ἐμφῦναι ταῖς ναῦσι—χρηματίζεσθαι—ἀφήκε τὴν λεωφόρον—Ἀρτάβανος ὁ χιλιάρχος.

III. Translate:

(a) ἃ δὲ τούτων ἐξαρτῶσιν ἔνιοι διηγήματα πλάττοντες, ἀποκήρυξιν μὲν ὑπὸ τοῦ πατρὸς αὐτοῦ, θάνατον δὲ τῆς μητρὸς ἐκούσιον ἐπὶ τῇ τοῦ παιδὸς ἀτιμίᾳ περιλύπου γενομένης, δοκεῖ κατεψεύσθαι.

Explain *ἀποκήρυξιν*, *ἀτιμία*.

(b) παραπλέων δὲ τὴν χώραν ὁ Θεμιστοκλῆς, ἥπερ κατάρσεις ἀναγκαίας καὶ καταφυγὰς ἑώρα τοῖς πολεμίοις, ἐνεχάραττε κατὰ τῶν λίθων ἐπιφανῇ γράμματα.

Describe the occasion. What was the purport of the *γράμματα*?

(c) ὁ Θεμιστοκλῆς ἐπιστρέψας τὸν λόγον 'Ἡμεῖς τοι' εἶπεν 'ὦ μοχθηρέ, τὰς μὲν οἰκίας καὶ τὰ τείχη καταλελοίπαμεν, οὐκ ἀξιούντες ἀψύχων ἕνεκα δουλεύειν.'

Explain the circumstances. Parse *ἀψύχων*.

(d) δύο γὰρ ἦκειν ἔφη θεοὺς κομίζων, Πειθὼ καὶ Βίαν· οἱ δ' ἔφασαν εἶναι καὶ παρ' αὐτοῖς θεοὺς μεγάλους δύο, Πενίαν καὶ Ἀπορίαν, ὧν κωλύεσθαι δοῦναι χρήματα ἐκείνῳ.

What was the occasion of this conversation? Parse *κωλύεσθαι*.

(e) Μιθροπαύστης μὲν ἀνεψιὸς ὦν βασιλέως εἶπε τοῦ Δημαράτου τῆς τιάρως ἀψάμενος· 'Αὕτη μὲν ἡ κίταρις οὐκ ἔχει ἐγκέφαλον, ὃν ἐπικαλύψει· σὺ δ' οὐκ ἔσῃ Ζεὺς, ἂν λάβῃς κεραυνόν.'

What was the occasion of this remark?

TUESDAY, Dec. 9, 1884. 12½—3.

Candidates must satisfy the Examiners in each division of this paper. Use separate books for your answers in Latin and in Greek Grammar, and give them up separately.

LATIN GRAMMAR.

(A)

I. GIVE the gen. sing. of *limes*, the abl. pl. of *acus*, the acc. pl. of *femur*, the abl. sing. of *saltus*, the abl. sing. of *abies*, the acc. sing. of *murex*, the voc. sing. of *deus*.

What is the gender of *obice*, *rostris*, *fragmine*?

II. Write down in full, the nom. sing. of *alacres*, the acc. pl. of *uterlibet*, the gen. pl. of *idem*, the acc. pl. of *aeger*, the gen. sing. of *ullus*.

Write down, in order, all the degrees of comparison of *taster*, *dix*, *ocius*, *pius*, *potis*.

III. Write down and give the English of the 2nd sing. fut. perf. of *torqueo*, the 2nd pl. perf. ind. of *gigno*, the 2nd pl. pres. ind. of *nolo*, the voc. sing. mas. of the gerundive of *miseror*, the acc. pl. mas. pres. part. of *eo*, the 2nd sing. perf. ind. of *jaceo*, the 1st pl. fut. ind. of *fugo*, the 2nd pl. fut. ind. of *dignor*, the 3rd sing. fut. ind. pass. of *eo*, the acc. sing. fem. perf. part. pass. of *arrigo*.

IV. Parse and give the English of

venantum, *murice*, *ferit*, *aëra*, *contorta*, *crearat*, *miserere*, *sequaci*, *pactas*, *indole*.

V. Read the following quotations, do not translate them, but answer only the points asked:

(i) *demens*, qui Rutulum in medio non agmine regem
viderit inrumpentem ultroque incluserit urbi.

Account for the mood and for the tense of *viderit*.

(ii) *continuo nova lux oculis effulsit*.

Parse *oculis*. What is the exact meaning of *nova*?

(iii) *quod ut o potius formidine falsa*

ludar, et in melius tua, qui potes, orsa reflectas.

Account for the mood and for the tense of *ludar*.

(iv) *da nunc*, Thybri pater, ferro, quod missile libro
fortunam.

Parse fully *quod* and *missile*.

(v) *cuperem ipse pater spectator adesset*.

Account for the mood and for the tense of *cuperem*.

(vi) *et sua quaeque*

continuo puppes abrumpunt vincula ripis.

Parse *quaeque*.

(vii) *ter maxima Juno*

continuit iuvenemque animi miserata repressit.

Parse *animi*.

(viii) *numquam ne levare*

obsidione sines?

Parse *levare*.

(ix) *non ulli est animus stricto concurrere ferro*.

Parse *ulli*. In what kinds of sentences is *ulli* used?

(x) *postquam inter retia ventum est*.

Quote the rule exemplified by the use of *ventum est*.

GREEK GRAMMAR.

I. GIVE the genitive singular of *πολιτεία*, *δῆμος*, the accusative singular of *ἐλευθεριότης*, *Ἀριστείδης*, the dative singular of *αἰδώς*, the genitive plural of *πρᾶξις*, the accusative plural of *ὑπήκοος* (masc.), and the gender of *ἀνομοιότης*, *νύξ*, *γύναιον*.

II. Write down the accus. sing. fem. of *ἕτερος*, accus. sing. masc. of *χείρων*, dat. sing. masc. of *βραχύς*, gen. sing. fem. of *τοιοῦτος*, accus. plur. masc. of *πᾶς*, superlative of *πολύς*, *ἦττον*, *αἰτιος*, accus. sing. fem. of *ὅς*, *οὗτος*.

What case is governed by *ἐν*?

III. Write down and give the English of

the imperf. indic. act. 3rd sing. of *ἐναρμόττω*, future indic. 3rd sing. of *θεάομαι*, aorist particip. pass. gen. sing. fem. of *παρατίθημι*, 1 aorist subjunct. act. 1st plur. of *κατακλέω*, 1 aorist infinit. pass. of *συντελέω*, perf. infinit. pass. of *διαπράττω*, 1 aorist infinit. act. of *συνεθίζω*, 2 aorist act. 3rd sing. of *ὑπερβάλλω*, 2 aorist optative 3rd plur. of *ἀναλαμβάνω*, pres. particip. mid. gen. plur. of *συνεπαιτιάω*.

IV. Parse and give the English of

ἀγῶνα, *ἐφοδίω*, *παντάπασι*, *Πειραιᾷ*, *τροφεῦσιν*, *Ἴωσι*, *ἐκδίδωσι*, *εἰρητο*, *ἀπαλαγέντα*, *ἐναλέσθαι*.

V. Read through the following passage, and parse fully the words *ἦν*, *ἐπαχθής*, *συμμάχοις*, *νήσους*, *οἶα*, *ἀργύριον*, *αἰτοῦντα*, *αὐτόν*, *θεούς*, *Πειθῶ*, explaining their construction.

Ἦν δὲ καὶ τοῖς συμμάχοις ἐπαχθῆς περιπλέων τε τὰς νήσους καὶ χρηματίζομενος ἀπ' αὐτῶν οἶα καὶ πρὸς Ἀνδρίους ἀργύριον αἰτοῦντά φησιν αὐτὸν Ἡρόδοτος εἰπεῖν τε καὶ ἀκούσαι. Δύο γὰρ ἦκειν ἕφθ θεοὺς κομίζων, Πειθῶ καὶ Βίαν.

You are not required to translate this passage.

TUESDAY, Dec. 9, 1884. 12½—3.

Candidates must satisfy the Examiners in each division of this paper. Use separate books for your answers in Latin and in Greek Grammar, and give them up separately.

LATIN GRAMMAR.

(B)

I. GIVE the dat. sing. of *limes*, the abl. pl. of *arcus*, the acc. pl. of *guttur*, the abl. sing. of *tinnitus*, the abl. pl. of *abies*, the acc. pl. of *murex*, the voc. sing. of *filius*.

What is the gender of *ilice*, *capulo*, *tegmine*?

II. Write down, in full, the nom. sing. of *acribus*, the acc. pl. of *utervis*, the gen. of *duo*, the acc. sing. of *aeger*, the gen. sing. of *nullus*.

Write down, in order, all the degrees of comparison of *asper*, *satius*, *amplius*, *vetus*, *sublime*.

III. Write down and give the English of the 3rd pl. fut. perf. of *sto*, the 2nd pl. perf. ind. of *colo*, the 2nd pl. pres. ind. of *malo*, the voc. sing. masc. of the gerundive of *memoro*, the gen. sing. fem. of the pres. part. of *eo*, the 2nd sing. fut. perf. of *jacio*, the 3rd sing. pluperf. ind. of *fugo*, the 2nd pl. fut. ind. of *solor*, the 3rd sing. pres. ind. pass. of *eo*, the acc. sing. fem. perf. part. pass. of *porrigo*.

IV. Parse and give the English of

sequentum, *cortice*, *face*, *aera*, *intorto*, *celarat*, *morere*, *minacis*, *tonsis*, *grues*.

V. Read the following passages, do not translate them but answer *only* the points asked:

- (i) *demens*, *qui Rutulum in medio non agmine regem viderit inrumpentem ultroque incluserit urbi*.

Account for the mood and for the tense of *incluserit*.

- (ii) hic primum nova lux oculis effulsit.

Parse *oculis*. What English word best gives the meaning of *nova*?

- (iii) quod ut o potius formidine falsa
ludar, et in melius tua, qui potes, orsa reflectas.

Account for the mood and for the tense of *reflectas*.

- (iv) dextra, mihi deus, et telum, quod missile libro
nunc adsint.

Parse fully *quod* and *missile*.

- (v) Turne, quod optanti divom promittere nemo
auderet, volvenda dies en attulit ultro.

Account for the mood and for the tense of *auderet*.

- (vi) ast illos centeni quemque sequuntur.

Parse *quemque*.

- (vii) et praeceps animi Tmarus et Mavortius Haemon

Parse *animi*.

- (viii) poplite Palmum
succiso volvi segnem sinit.

Parse *volvi*.

- (ix) nec cuiquam irasci propiusque accedere virtus.

Parse *cuiquam*. In what kinds of sentences is *cuiquam* used?

- (x) certatur limine in ipso
Ausoniae.

Quote the rule exemplified by the use of *certatur*.

GREEK GRAMMAR.

I. GIVE the genitive singular of γένος, γαστήρ, the accusative singular of πῖναξ, ἰσότης, the dative singular of Ἑλλάς, the dative plural of θύρα, the accusative plural of γυνή, and the gender of μέλος, λιμήν, λαμπρότης.

II. Write down the accus. plur. masc. of βαρύς, accus. sing. masc. of οὐδείς, dat. plur. masc. of πᾶς, accus. plur. neut. of ἐπιφανής, comparative of λυσιτελής, ἄδικος, μάλιστα, accus. plur. neut. of ὅς, οὗτος.

What case is governed by ἀπό?

III. Write down and give the English of
the imperf. indic. act. 3rd sing. of ἄρχω, future indic. 3rd sing. of ἐπανορθόμαι, 1 aorist indic. act. 3rd sing. of ὑποτίθημι, imperf. indic. 3rd plur. of οἶμαι, 2 aorist particip. nom. plur. of πυνθάνομαι, perfect infinitive of καταψεύδομαι, imperf. indic. mid. 3rd sing. of ποιέω, 1 aorist particip. pass. gen. plur. masc. of καλέω, 1 aorist subjunct. act. 1st plur. of καθίστημι, 1 aorist optative 3rd plur. of δέομαι.

IV. Parse and give the English of

ἱκεσίαν, Πειραιῶς, ὄντως, Εὐβοεῖς, Πλαταιᾶσιν, σφᾶς, πάταξον, ἐξήνεγκεν, ὑπισχνεῖτο, πεύσεται.

V. Read through the following passage and parse fully the words πόλεως, Πανσανίαν, συμπεσόντα, παρέσχε, ἐχθροῖς, ἀφορμάς, προδοσίας, Ἀλκμέωνος, ἅμα, Σπαρτιατῶν.

Ἐκπεσόντος δὲ τῆς πόλεως αὐτοῦ καὶ διατρίβοντος ἐν Ἀργεὶ τὰ περὶ Πανσανίαν συμπεσόντα κατ' ἐκείνου παρέσχε τοῖς ἐχθροῖς ἀφορμάς. ὁ δὲ γραψάμενος αὐτὸν προδοσίας Λεωβώτης ἦν ὁ Ἀλκμέωνος Ἀγρυλῆθεν, ἅμα συνεπαιτωμένων τῶν Σπαρτιατῶν.

You are not required to translate this passage.

WEDNESDAY, December 10, 1884. 9—11½.

UNPREPARED TRANSLATIONS.

(A)

TRANSLATE INTO ENGLISH:

(1) Nam quum quidam ex eius adsentatoribus, Damocles, commemoraret in sermone copias eius, opes, maiestatem dominatus, rerum abundantiam, magnificentiam aedium regiarum, negaretque umquam beatiorum quemquam fuisse: viane igitur, inquit, o Damocle, quoniam te haec vita delectat, ipse eandem* degustare et fortunam experiri meam? quum se ille cupere dixisset, collocari iussit hominem in aureo lecto strato pulcherrimo textili stragulo, magnificis operibus picto, abacosque complures ornavit argento auroque caelato. tum ad mensam eximia forma pueros delectos iussit consistere eosque nutum illius intuentes diligenter ministrare. aderant unguenta, coronae: incendebantur odores: mensae conquisitissimis epulis exstruebantur. fortunatus sibi Damocles videbatur. in hoc medio apparatu fulgentem gladium e lacunari seta equina aptum demitti iussit, ut impenderet illius beati cervicibus.

CICERO, *Tusc. Disput.* v. 21.

(2) In caput alta suum labentur ab aequore retro
flumina, conversis solque recurret equis:
terra feret stellas, caelum findetur aratro,
unda dabit flammam et dabit ignis aquas:
omnia naturae praepostera legibus ibunt,
parsque suum mundi nulla tenebit iter:
omnia iam fient, fieri quae posse negabam,
et nihil est, de quo non sit habenda fides.
haec ego vaticinor, quia sum deceptus ab illo,
laturum misero quem mihi rebar opem.

OVID, *Trist.* I. VIII. 1.

(3) Candidus insuetum miratur limen Olympi
sub pedibusque videt nubes et sidera Daphnia.
ergo alacris silvas et cetera rura voluptas
Panaque pastoresque tenet Dryadasque puellas.
nec lupus insidias pecori, nec retia cervis
ulla dolum meditantur; amat bonus otia Daphnia.
ipsi laetitia voces ad sidera iactant
intonsi montes; ipsae iam carmina rupes,
ipsa sonant arbusta: 'deus, deus ille, Menalca!'

VIRGIL, *Buc.* v. 56.

* "eadem", Kühner.

WEDNESDAY, December 10, 1884. 9—11½.

UNPREPARED TRANSLATIONS.

(B)

TRANSLATE INTO ENGLISH:

(1) Primum Argiae sacerdotis Cleobis et Biton filii praedicantur. nota fabula est. quum enim illam ad solemne et statum sacrificium curru vehi ius esset, satis longe ab oppido ad fanum, morarenturque iumenta, tunc iuvenes ii, quos modo nominavi, veste posita, corpora oleo perunxerunt, ad iugum accesserunt. ita sacerdos advecta in fanum, quum currus esset ductus a filiis, precata a dea dicitur, ut id iis praemii daret pro pietate, quod maximum homini dari posset a deo; post epulatos cum matre adolescentes somno se dedisse, mane inventos esse mortuos. simili precatione Trephonius et Agamedes usi dicuntur: qui quum Apollini Delphis templum exaedificavissent, venerantes deum petiverunt mercedem non parvam quidem operis et laboris sui, nihil certi, sed quod esset optimum homini. quibus Apollo se id daturum ostendit post eius diei diem tertium; qui ut illuxit, mortui sunt reperti.

CICERO, *Tusc. Disp.* I. 47.

- (2) Tantane te, fallax, cepere obliviam nostri,
afflictumque fuit tantus adire timor,
ut neque respiceres, nec solarere iacentem,
dure, nec exequias prosequerere meas?
illud amicitiae sanctum ac venerabile nomen
re tibi pro vili sub pedibusque iacet?
quid fuit, ingenti prostratum mole sodalem
visere et adloqui parte levare tui?
inque meos si non lacrimam dimittere casus,
pauca tamen ficto verba dolore queri.

OVID, *Trist.* I. VIII. 11.

- (3) Forte sub arguta consederat ilice Daphnis,
compulerantque greges Corydon et Thyrsis in unum,
Thyrsis oves, Corydon distentas lacte capellas,
ambo florentes aetatibus, Arcades ambo,
et cantare pares et respondere parati.
huc mihi, dum teneras defendo a frigore myrtos,
vir gregis ipse caper deerraverat; atque ego Daphnim
aspicio. ille ubi me contra videt, 'ocius' inquit
'huc ades, o Meliboe; caper tibi salvus et haedi.'

VIRGIL, *Buc.* VII. 1.

THURSDAY, December 11, 1884. 9—11½.

PALEY'S EVIDENCES OF CHRISTIANITY. (A)

1. Discuss the antecedent probability or improbability of miracles.
2. Illustrate the ideas of toleration prevalent amongst the educated heathen in the early days of Christianity.
3. Quote any words of Christ foretelling the persecution of his disciples; and state clearly the argument based upon them.
4. Show from the acknowledged part of the case that the Apostles must have claimed miracles as evidence for their story.
5. Mention any Christian writers of the first four centuries who set forth catalogues of the New Testament Scriptures; and state when and where they lived.
6. What classes of alleged miracles does Paley reject as resting on insufficient proof? Show that the Gospel miracles cannot be included in any of these classes.
7. Narrate and discuss the cures which Tacitus says were performed by Vespasian.
8. Point out and illustrate the negative character of Christ's discourses.
9. Compare Mahometanism with Christianity.
10. Mention and account for any alleged discrepancies between the several Gospels.

THURSDAY, December 11, 1884. 9—11½.

PALEY'S EVIDENCES OF CHRISTIANITY. (B)

1. Discuss the question of Experience as affecting the credibility of miracles.
2. What view was it *a priori* probable that the Roman government in Judaea would take of Christianity in its beginning?
3. Prove from the New Testament that the first Christians assumed, upon their conversion, a new and peculiar course of private life.
4. What evidence is there to show that the Scriptures of the New Testament belong to the age of the Apostles?
5. Mention any Christian writers of the first four centuries who wrote commentaries on the books of the New Testament; and state when and where they lived.
6. What classes of alleged miracles does Paley reject as being in themselves not miraculous? Show that the Gospel miracles cannot be so explained away.
7. Narrate and discuss the cures said to have been performed at the tomb of the Abbé Paris.
8. How does the personal character of Christ himself affect the morality of the Gospel?
9. Give a short account of the three periods into which Paley divides the history of the early propagation of Christianity.
10. State and answer an objection made to Christianity from its supposed effects.

THURSDAY, December 11, 1884. 9—11½.

LOGIC.

1. DISTINGUISH between the connotation and the denotation of a term. Illustrate the statement that in general as the connotation of a term is increased its denotation is decreased.

2. Explain what is meant by simple conversion, conversion *per accidens*, conversion by contraposition.

Give the contrapositive of the proposition,—The Gods are just.

Does it follow that a proposition admits of simple conversion because its predicate is distributed?

3. State the rules of the Syllogism; and deduce from them the two corollaries, namely, that from two particular premisses nothing can be inferred, and that if one premiss is particular the conclusion must be particular.

4. Taking *S*, *M*, *P*, for the minor, middle and major terms respectively, construct syllogisms in the following moods:—

AAE in Figure 2,

AOO „ 3,

AAI „ 4.

Shew how each of these moods may be reduced to Figure 1.

5. Examine the following arguments:—

(i) If the Earth turns on its axis, falling bodies must diverge from the perpendicular; now experiment shews that they do so diverge; therefore, the Earth must turn on its axis.

(ii) How can you admit that any wise men are unhappy when you deny that any dishonest men are wise and also that any honest men are unhappy?

6. Distinguish between Experiment and mere passive Observation. In what consists the superiority of the former?

7. Explain what is meant by the Joint Method of Agreement and Difference; and point out wherein it differs from the simple Method of Difference.

8. What is meant by Scientific Explanation? Give illustrations.

9. Explain briefly, giving one example in each case:—*argumentum a fortiori*, *argumentum ad hominem*, axiom, corollary, dilemma, enthymeme, paradox, sorites.

THURSDAY, *December* 11, 1884. 12½—3.

For candidates under the old regulations.

EUCLID.

(A)

1. GIVE all Euclid's definitions of four-sided figures.

If, at a point in a straight line, two other straight lines, on the opposite sides of it, make the adjacent angles together equal to two right angles, these two straight lines shall be in one and the same straight line.

2. All the interior angles of any rectilineal figure, together with four right angles, are equal to twice as many right angles as the figure has sides.

3. Equal triangles on the same base, and on the same side of it, are between the same parallels.

If two equal lines AB , CD cross one another, and AC is equal to BD , then shall AD be parallel to BC .

4. If the square described on one of the sides of a triangle be equal to the squares described on the other two sides of it, the angle contained by these two sides is a right angle.

If the sum of the squares on any two sides of a triangle is greater than the square on the third side, the triangle is acute-angled.

5. If a straight line be divided into any two parts, the squares on the whole line, and on one of the parts, are equal to twice the rectangle contained by the whole and that part, together with the square on the other part.

6. Draw from a given point without a circle two straight lines to touch the circle, and shew that they are equal to one another.

If the four sides of a quadrilateral touch a circle, the sum of one pair of opposite sides is equal to the sum of the other pair.

7. From a given circle cut off a segment containing an angle equal to a given rectilineal angle.

8. Find a third proportional to two given straight lines.

Prove that half the sum of the first given line and the third proportional is greater than the second given line.

9. Similar triangles are to one another in the duplicate ratio of their homologous sides.

THURSDAY, December 11, 1884. 12½—3.

For candidates under the old regulations.

EUCLID.

(B)

1. How does Euclid classify triangles

- (i) by means of their sides,
- (ii) by means of their angles?

Shew that two straight lines cannot have a common segment.

2. All the exterior angles of any rectilineal figure are together equal to four right angles.

3. Equal triangles, on equal bases, in the same straight line, and on the same side of it, are between the same parallels.

If equal triangles have their bases in the same straight line, and are between the same parallels, their bases shall be equal to one another.

4. In any right-angled triangle, the square which is described on the side subtending the right angle is equal to the squares described on the sides which contain the right angle.

If the diagonals of a quadrilateral are at right angles to one another, the sum of the squares on one pair of opposite sides shall be equal to the sum of the squares on the other pair.

5. If a straight line be divided into two equal parts and also into two unequal parts, the rectangle contained by the unequal parts, together with the square on the line between the points of section, is equal to the square on half the line.

6. The opposite angles of any quadrilateral figure inscribed in a circle are together equal to two right angles.

Every parallelogram through the angular points of which a circle can be described is a rectangle.

7. On a given straight line describe a segment of a circle, containing an angle equal to a given rectilineal angle.

8. Find a mean proportional between two given straight lines.

Prove that the sum of the given lines is greater than twice their mean proportional.

9. Similar triangles are to one another in the duplicate ratio of their homologous sides.

THURSDAY, *December 11, 1884.* 12½—3.

For candidates under the new regulations.

EUCLID.

(A)

1. GIVE all Euclid's definitions of four-sided figures.

If, at a point in a straight line, two other straight lines, on the opposite sides of it, make the adjacent angles together equal to two right angles, these two straight lines shall be in one and the same straight line.

2. All the interior angles of any rectilineal figure, together with four right angles, are equal to twice as many right angles as the figure has sides.

If all the angles of an octagon are equal to one another, find the value of each.

3. Equal triangles on the same base, and on the same side of it, are between the same parallels.

If two equal lines AB , CD cross one another, and AC is equal to BD , then shall AD be parallel to BC .

4. If the square described on one of the sides of a triangle be equal to the squares described on the other two sides of it, the angle contained by these two sides is a right angle.

If the sum of the squares on any two sides of a triangle is greater than the square on the third side, the triangle is acute-angled.

5. If a straight line be divided into any two parts, the squares on the whole line, and on one of the parts, are equal to twice the rectangle contained by the whole and that part, together with the square on the other part.

Enunciate any other proposition of the second book in which this theorem is used.

6. Draw from a given point without a circle two straight lines to touch the circle, and shew that they are equal to one another.

If the four sides of a quadrilateral touch a circle, the sum of one pair of opposite sides is equal to the sum of the other pair.

7. From a given circle cut off a segment containing an angle equal to a given rectilineal angle.

8. Find a third proportional to two given straight lines.

Prove that half the sum of the first given line and the third proportional is greater than the second given line.

THURSDAY, December 11, 1884. 12½—3.

For candidates under the new regulations.

EUCLID.

(B)

1. How does Euclid classify triangles

- (i) by means of their sides,
- (ii) by means of their angles?

Shew that two straight lines cannot have a common segment.

2. All the exterior angles of any rectilineal figure are together equal to four right angles.

If all the angles of a hexagon are equal to one another, find the value of each.

3. Equal triangles, on equal bases, in the same straight line, and on the same side of it, are between the same parallels.

If equal triangles have their bases in the same straight line, and are between the same parallels, their bases shall be equal to one another.

4. In any right-angled triangle, the square which is described on the side subtending the right angle is equal to the squares described on the sides which contain the right angle.

If the diagonals of a quadrilateral are at right angles to one another, the sum of the squares on one pair of opposite sides shall be equal to the sum of the squares on the other pair.

5. If a straight line be divided into two equal parts and also into two unequal parts, the rectangle contained by the unequal parts, together with the square on the line between the points of section, is equal to the square on half the line.

Enunciate any other proposition of the second book in which this theorem is used.

6. The opposite angles of any quadrilateral figure inscribed in a circle are together equal to two right angles.

Every parallelogram through the angular points of which a circle can be described is a rectangle.

7. On a given straight line describe a segment of a circle, containing an angle equal to a given rectilineal angle.

8. Find a mean proportional between two given straight lines.

Prove that the sum of the given lines is greater than twice their mean proportional.

THURSDAY, Dec. 11, 1884. 12½—3.

This paper is for those Candidates only who are in their second or some later Term of Residence.

VIRGIL, AENEID. BOOKS IX., X.

N.B.—Candidates are expected to show a competent knowledge on the whole of the paper.

I. TRANSLATE, and, where necessary, explain the following passages:

- (i) hactenus indulsisse vacat. sin altior istis
sub precibus venia ulla latet, totumque moveri
mutarive putas bellum, spes pascis inanis.

In what different senses is *sub* used in composition?

- (ii) respicit ignarus rerum ingratusque salutis,
et duplicis cum voce manus ad sidera tendit.

Derive *duplicis* and *tremefecit*.

- (iii) multa super Lauso rogitat, multumque remittit,
qui revocent, maestique ferant mandata parentis.

Account for the mood and for the tense of *ferant*.

- (iv) immo ubi defunctae finem portusque tenebunt
Ausonios olim, quaecumque evaserit undis
mortalem eripiam formam, magnique iubebo
aequoris esse deas.

What is the force of *de* in *defunctae*?

- (v) quod ut o potius formidine falsa
ludar, et in melius tua, qui potes, orsa reflectas.

Parse *quod* and *orsa*.

- (vi) nunc coniugis esto
quisque suae tectique memor; nunc magna referto
facta, patrum laudes.

Parse *tecti* and *magna*, and state the rules which they exemplify.

- (vii) tum certare odiis, tum res rapuisse licebit.

Give all the tenses of *licebit*.

- (viii) aut tu, magne pater divom, miserere, tuoque
invisum hoc detrude caput sub Tartara telo.

Parse *divom*, *pater*, and *Tartara*.

- (ix) acrius hoc Teucris clamore incumbere magno,
et glomerare manum.

Parse *acrius*.

II. Translate as closely as is possible in good English:

- (i) quis deus *Italiam*, quae vos dementia adegit?
 non hic Atridae, nec fandi fictor Ulixes.
 durum ab stirpe genus natos ad flumina primum
 deferimus saevoque *gelu* duramus et undis;
venatu invigilant pueri, silvasque fatigant;
 flectere ludus equos et spicula tendere cornu.
 at patiens *operum* parvoque adsueta iuventus
 aut rastris terram domat, aut quatit oppida bello.
- (ii) Aeneia puppis
 prima tenet, rostro Phrygios subiuncta *leones*;
 imminet Ida super, profugis gratissima Teucris.
 hic magnus sedet Aeneas, secumque volutat
 eventus belli varios; Pallasque sinistro
 adfixus *lateri* iam quaerit sidera, opacae
 noctis iter, iam quae *passus* terraque marique.
- (iii) quid ago? aut quae iam satis ima dehiscat
 terra mihi? vos o potius miserescite, venti;
 in rupes, in saxa—volens vos Turnus adoro—
 ferte ratem, saevisque *vadis* inmittite Syrtis,
 quo neque me Rutuli, nec conscia fama sequatur.
- (iv) pandite nunc Heliconae, deae, cantusque movete,
 quae manus interea Tuscis comitetur ab oris
 Aenean, armetque rates, *pelagoque* vehatur.

III. Explain clearly, in order, the historical and geographical allusions in question II. and also those in the following passages (*without translating them*), taking particular care to define as clearly as possible the position of the places mentioned:

- (i) Strymoniae dant signa grues.
 (ii) nec muris cohibet patriis media Ardea Turnum.
 (iii) hinc nomen Campanae ducitur urbi.
 (iv) et dulcis moriens reminiscitur Argos.
 (v) tacitis regnavit Amyclis.
 (vi) Paris urbe paterna
 occubat; ignarum Laurens habet ora Mimanta.
 (vii) dum domus Aeneae Capitoli immobile saxum
 accolet.

IV. Parse fully, in order, the words in italics in question II., and state the rules which they exemplify.

Where were Populonia, Eryx, Ilva, Cythera, Idalium?

FRIDAY, December 12, 1884. 9—11½.

ARITHMETIC.

(A)

1. FIND the least number which must be added to seven thousand and one million nine hundred and seven thousand and sixty-one, in order that it may be exactly divisible by seven hundred and nine thousand four hundred and eighty.

2. Find (1) the number of pipes, &c. in 365109 pints.

(2) „ „ acres, roods, &c. in 1581375 square links.

3. A farmer selling wheat at 34s. a quarter would just pay his expenses: he has however to sell half his crop at 33s. 8d., but waits then and sells the remainder at 35s. 10d., making altogether a profit of £31. 17s. 6d. How many quarters of wheat did he sell?

4. (α) Simplify $\frac{17\frac{3}{4} - (4\frac{1}{2} \times 3\frac{3}{4})}{13\frac{1}{2} - (2\frac{1}{4} \times 5\frac{1}{4})} \div 10\frac{3}{4}$.

(β) Reduce the following fractions to decimals and add the resulting decimals together:

$$\frac{7}{80}, \frac{1}{840000}, \frac{8}{7}.$$

5. Find the value of

$$.094921875 \text{ of } £5. 6s. 8d. - .054 \text{ of } 24s. 9d. + .583 \text{ of } 41s. 3d.$$

6. A Centiare or square metre is 10·764299 square feet. Shew that a thousand Centiares is nearly equal to a quarter of an acre.

7. Find by Practice the value of 36 cwt. 1 qr. 22 lbs. 8 oz. at £2. 5s. 0d. per cwt.

8. The rate of interest in a Savings Bank is £2. 13s. 4d. per cent. per annum. A man deposits £18, and on withdrawing the same he finds that his interest is 8s. For how long was the money deposited?

9. Find what length of paper 2½ feet broad is required for the walls of a rectangular room whose width is 14 ft. 5 in., length 20 ft. 1 in., and height 12 ft., supposing that the door and windows cover 15 per cent. of the surface.

10. A starts a business with a capital of £4000: after three months he takes B with a capital of £7000 into partnership, and four months later C with a capital of £3000. At the end of the year the profits are divided and A finds that he has to pay £6 as income tax. Find the total profits of the concern, the tax being at the rate of 6d. in the £.

11. A person invests £13650 in a 4 per cent. stock at 91: on the stock falling to 75 he sells out, and investing the proceeds in an 8 per cent. stock, he finds that he thereby loses in interest £60. What is the price of the latter stock?

FRIDAY, December 12, 1884. 9—11½.

ARITHMETIC.

(B)

1. FIND the least number that must be subtracted from seven thousand and nine millions one hundred and seven thousand and sixteen in order that it may be exactly divisible by nine hundred and seven thousand eight hundred and forty.

2. Find (1) the number of poles, &c. in 365109 inches.

(2) „ „ acres, roods, &c. in 3650875 square links.

3. A farmer selling wheat at 34s. a quarter would just pay his expenses: he sells half his crop at 1s. 2d. below that price, and the remainder at 2s. 3d. above it, making thereby a profit of £46. 0s. 10d. How many quarters of wheat did he sell?

4. (a) Simplify $\frac{13\frac{3}{4} - (3\frac{1}{2} \times 2\frac{1}{4})}{14\frac{3}{4} - (8\frac{1}{2} \times 1\frac{1}{4})} \div 7\frac{2}{13}$.

(b) Reduce the following fractions to decimals and add the resulting decimals together,

$$\frac{7}{150}, \frac{1}{2100000}, \frac{1}{36}.$$

5. Find the value of

$$\cdot 18984375 \text{ of } £2. 13s. 4d. - \cdot 227 \text{ of } 19s. 2d. + \cdot 767 \text{ of } 13s. 9d.$$

6. Given that a metre is 39·37079 inches, shew that the difference between 5 miles and 8 kilometres is nearly 51 yards.

N. B. A kilometre is 1000 metres.

7. Find by Practice the value of 54 cwt. 2 qr. 19 lbs. 12 oz. at £3. 7s. 6d. per cwt.

8. The rate of interest in a Savings Bank is £2. 13s. 4d. per cent. per annum. A man deposits a sum of money for 11 months, and finds on withdrawing it that his interest is 14s. 8d. How much did he deposit?

9. Find what length of paper 2½ ft. broad is required for the walls of a rectangular room whose width is 13 ft. 4 in., length 19 ft. 2 in., and height 11 ft., supposing that the door and windows cover 12½ per cent. of the surface.

10. A starts a business with a capital of £3000: after 5 months he takes B with a capital of £2000 into partnership, and one month later C with a capital of £4500. At the end of the year the profits are divided, and B finds that he has to pay 5 guineas as income tax. Find the total profits of the concern, the tax being at the rate of 6d. in the £.

11. A person invests £28227 in a 3 per cent. stock at 97, on the stock rising to par he sells out, and investing the proceeds in a new stock at 291, he finds that he thereby gains in interest £77. What is the rate of interest of the latter stock?

FRIDAY, December 12, 1884. 12½—3.

For candidates under the old regulations.

ELEMENTARY ALGEBRA.

(A)

1. SIMPLIFY

$$7(2a + b) - [19b - \{13(c - a) + 12(b - c)\}].$$

Find the value of

$$(a - c)(a + c) - (a + c)^2, \text{ where } 3a + 2c = 45, \text{ and } 3c + 2a = 15.$$

2. Divide

$$2x^4 - 10x^3y + 25x^2y^2 - 31xy^3 + 20y^4 \text{ by } x^2 - 3xy + 4y^2.$$

3. Resolve into the simplest possible factors:

$$(a) \quad x^5 - 19x^4y + 84x^3y^2,$$

$$(b) \quad (5x^2 - 26y^2)^2 - (4x^2 - 10y^2)^2,$$

$$(c) \quad 1 - 64x^3y^3.$$

4. Simplify

$$(a) \quad \frac{x^4 - 6x^2y^2 - 16y^4}{x^4 - 64y^4},$$

$$(b) \quad \left\{ 1 - \frac{1-x}{1+x} + \frac{1+2x^2}{1-x^2} \right\} \left\{ \frac{x+1}{2x+1} \right\}.$$

5. Find the Highest Common Factor of

$$x^4y - x^3y^2 - 15x^2y^3 + 38xy^4 - 14y^5 \text{ and } x^5 - 7x^4y + 21x^3y^2 - 34x^2y^3 + 28xy^4.$$

6. Extract the square root of

$$4x^4 - 28x^3y + 93x^2y^2 - 154xy^3 + 121y^4.$$

7. Shew that in the case when m and n are positive integers

$$(a^m)^n = a^{mn}.$$

Simplify

$$(\sqrt[3]{a^7}) \times (\sqrt[3]{a^8}) \times a^{-\frac{1}{3}} \div a^{\frac{1}{3}}.$$

8. Solve the equations:

$$(a) \quad \frac{x+1}{8} - \frac{2x+1}{3} = \frac{4x-1}{6} - \frac{5x-1}{4},$$

$$(b) \quad 3 - \frac{4}{x+7} = \frac{40}{x^2-49} - \frac{3}{7-x}.$$

9. Solve the equations:

$$(a) \quad 3x + 2y - 1 = 2x + 5y - 18 = x + 4y - 11,$$

$$(b) \quad \begin{cases} 9x^2 - 4y^2 = 576, \\ 2y - 3x = -12. \end{cases}$$

10. Define Ratio.

If $\frac{7x+10y}{24x-5y} = \frac{3}{4}$ find the ratio of x to y .

11. Shew that a ratio of less inequality is increased by adding the same quantity to its antecedent and its consequent.

If $a + b - c : c + d + a = a - c : 2d$,
shew that

$$b : a - c = a + c - d : 2d.$$

12. If x varies as z when y is constant and as y when z is constant, shew that x varies as yz when both y and z vary.

If x vary as the sum of two quantities one of which varies as y^2 and the other inversely as z^2 , find the value of y when $x=37$ and $z=1$, it being given that $x=45$ when $y=1$ and $z=1$, and that $x=40$ when $y=2$ and $z=3$.

FRIDAY, December 12, 1884. 12½—3.

For candidates under the old regulations.

ELEMENTARY ALGEBRA.

(B)

1. SIMPLIFY

$$8(2a+b) - [17b - \{15c - a + 9b - c\}].$$

Find the value of

$$a^2 - b^2 - (a-b)^2, \text{ where } a+2b=13, \text{ and } 2a+b=32.$$

2. Divide

$$2x^4 + 5x^3y - 16x^2y^2 + 35xy^3 - 12y^4 \text{ by } x^2 - 2xy + 3y^2.$$

3. Resolve into the simplest possible factors:

$$(a) \quad x^3 - 17x^2y^2 + 60xy^4,$$

$$(b) \quad (13x^2 - 5y^2)^2 - (12x^2 + 4y^2)^2,$$

$$(c) \quad 1 - 27x^3y^6.$$

4. Simplify

$$(a) \quad \frac{x^4 - 7x^2y^2 - 18y^4}{x^4 - 81y^4},$$

$$(b) \quad \left(1 - \frac{1-x}{1+x} - \frac{1-10x^2}{1-x^2}\right) \left(\frac{x-1}{4x-1}\right).$$

5. Find the Highest Common Factor of

$$x^4y - 8x^3y^2 + 17x^2y^3 - 16xy^4 + 9y^5 \text{ and } x^5 - 9x^4y + 26x^3y^2 - 39x^2y^3 + 27xy^4.$$

6. Extract the square root of

$$x^4 - 18x^3y + 95x^2y^2 - 126xy^3 + 49y^4.$$

7. Shew that in the case when
- m
- and
- n
- are positive integers and
- m
- is greater than
- n

$$a^m \div a^n = a^{m-n}.$$

Simplify

$$(\sqrt[3]{a^8}) \times (\sqrt[3]{a^7}) \times a^{-\frac{1}{3}} \div a^{\frac{1}{3}}.$$

8. Solve the equations:

$$(\alpha) \quad \frac{x-1}{8} - \frac{4x-9}{6} = \frac{2x-3}{3} - \frac{5x-11}{4}$$

$$(\beta) \quad 3 - \frac{1}{x+2} = \frac{5}{(x+2)(2x-3)} + \frac{3}{4x-6}.$$

9. Solve the equations:

$$(\alpha) \quad 5x + 2y - 1 = 3x - y + 14 = x + 19y + 6,$$

$$(\beta) \quad \begin{cases} 25x^2 - 9y^2 = 675, \\ 3y + 5x = 45. \end{cases}$$

10. Define Ratio.

$$\text{If} \quad \frac{8x-13y}{9x-4y} = \frac{6}{11}$$

find the ratio of x to y .

11. Shew that a ratio of greater inequality is diminished by adding the same quantity to its antecedent and its consequent.

$$\text{If} \quad x - z : y - z = x^2 : y^2,$$

shew that

$$x + z : y + z = \frac{x}{y} + 2 : \frac{y}{x} + 2.$$

12. If
- a
- varies as
- b
- when
- c
- is constant and as
- c
- when
- b
- is constant, shew that
- a
- varies jointly as
- b
- and
- c
- when both vary.

If x vary as the sum of the squares of two quantities one of which varies as y and the other as z inversely, find the value of y when $x=2$ and $z=6$, it being given that $x=40$ when $y=1$ and $z=1$, and that $x=20$ when $y=2$ and $z=3$.

FRIDAY, December 12, 1884. 12½—3.

For candidates under the new regulations.

ELEMENTARY ALGEBRA.

(A)

1. SIMPLIFY

$$7(2a + b) - [19b - \{13(c - a) + 12(b - c)\}].$$

Find the value of

$$(a - c)(a + c) - (a + c)^2, \text{ where } 3a + 2c = 45, \text{ and } 3c + 2a = 15.$$

2. Divide

$$2x^4 - 10x^3y + 25x^2y^2 - 31xy^3 + 20y^4 \text{ by } x^2 - 3xy + 4y^2.$$

3. Simplify :

$$(\alpha) \frac{x^4 - 6x^2y^2 - 16y^4}{x^4 - 64y^4},$$

$$(\beta) \left\{ 1 - \frac{1-x}{1+x} + \frac{1+2x^2}{1-x^2} \right\} \left\{ \frac{x+1}{2x+1} \right\}.$$

4. Find the Highest Common Factor of

$$x^4y - x^2y^3 - 15x^3y^2 + 38xy^4 - 14y^5 \text{ and } x^5 - 7x^4y + 21x^2y^2 - 34x^2y^3 + 28xy^4.$$

5. Shew that in the case when m and n are positive integers

$$(a^m)^n = a^{mn}.$$

Simplify

$$(\sqrt[3]{a^7}) \times (\sqrt[5]{a^9}) \times a^{-\frac{1}{2}} \div a^{\frac{1}{4}}.$$

6. Solve the equations :

$$(\alpha) \frac{x+1}{8} - \frac{2x+1}{3} = \frac{4x-1}{6} - \frac{5x-1}{4},$$

$$(\beta) 3 - \frac{4}{x+7} = \frac{40}{x^2-49} - \frac{3}{7-x}.$$

7. Solve the equations :

$$(\alpha) 3x + 2y - 1 = 2x + 5y - 18 = x + 4y - 11,$$

$$(\beta) \begin{cases} 9x^2 - 4y^2 = 576, \\ 2y - 3x = -12. \end{cases}$$

8. A train travelling from A to C direct at a uniform rate of $51\frac{1}{4}$ miles an hour accomplishes the distance in the same time as a train which travels from A to a station B between A and C at the uniform rate of 54 miles an hour, and without stopping at B proceeds to C at the uniform rate of 50 miles an hour. If the distance between B and C be 14 miles greater than that between A and B , find the distance between each pair of stations.

9. Find the sides of a rectangle whose area is unaltered if its length be increased by 3 inches while its breadth is diminished by 2 inches, and which loses one quarter of its area if its length be increased by 9 inches while the breadth is diminished by 5 inches.

10. Shew that a ratio of less inequality is increased by adding the same quantity to its antecedent and its consequent.

If $a + b - c : c + d + a = a - c : 2d$,
shew that

$$b : a - c = a + c - d : 2d.$$

11. Shew how to insert any number of arithmetical means between two given quantities.

If x, y, a be in arithmetical progression and if x, y, b be in geometrical progression, shew that $x, x - y, b - a$ are in geometrical progression.

12. Sum to 12 terms each of the series :

$$(\alpha) \quad 12\frac{1}{4} - 6\frac{3}{4} + 3\frac{1}{4} - \dots\dots\dots$$

$$(\beta) \quad 27 - 15\frac{1}{4} - 58\frac{1}{4} - \dots\dots\dots$$

FRIDAY, December 12, 1884. 12½—3.

For candidates under the new regulations.

ELEMENTARY ALGEBRA.

(B)

1. SIMPLIFY

$$8(2a + b) - [17b - \{15c - a + 9b - c\}].$$

Find the value of

$$a^2 - b^2 - (a - b)^2, \text{ where } a + 2b = 13, \text{ and } 2a + b = 32.$$

2. Divide

$$2x^4 + 5x^3y - 16x^2y^2 + 35xy^3 - 12y^4 \text{ by } x^2 - 2xy + 3y^2.$$

3. Simplify :

$$(\alpha) \quad \frac{x^4 - 7x^2y^2 - 18y^4}{x^4 - 81y^4},$$

$$(\beta) \quad \left(1 - \frac{1-x}{1+x} - \frac{1-10x^2}{1-x^2}\right) \left(\frac{x-1}{4x-1}\right).$$

4. Find the Highest Common Factor of

$$x^4y - 8x^3y^2 + 17x^2y^3 - 16xy^4 + 9y^5 \text{ and } x^5 - 9x^4y + 26x^3y^2 - 39x^2y^3 + 27xy^4.$$

5. Shew that in the case when m and n are positive integers and m is greater than n

$$a^m \div a^n = a^{m-n}.$$

Simplify

$$(\sqrt[3]{a^3}) \times (\sqrt[3]{a^3}) \times a^{-\frac{1}{2}} \div a^{\frac{1}{4}}.$$

6. Solve the equations:

$$(a) \quad \frac{x-1}{8} - \frac{4x-9}{6} = \frac{2x-3}{3} - \frac{5x-11}{4},$$

$$(\beta) \quad 3 - \frac{1}{x+2} = \frac{5}{(x+2)(2x-3)} + \frac{3}{4x-6}.$$

7. Solve the equations:

$$(a) \quad 5x + 2y - 1 = 3x - y + 14 = x + 19y + 6,$$

$$(\beta) \quad \begin{cases} 25x^2 - 9y^2 = 675, \\ 3y + 5x = 45. \end{cases}$$

8. A train travelling from A to C direct at a uniform rate of 54 miles an hour accomplishes the distance in the same time as a train which travels from A to a station B between A and C at the uniform rate of 60 miles an hour and without stopping at B proceeds from B to C at the uniform rate of 50 miles an hour. If the distance between B and C be 3 miles greater than that between A and B , find the number of miles between each pair of stations.

9. Find the sides of a rectangle whose area is unaltered if its length be increased by 4 feet while its breadth is diminished by 3 feet, and which loses one third of its area if its length be increased by 16 feet while its breadth is diminished by 10 feet.

10. Shew that a ratio of greater inequality is diminished by adding the same quantity to its antecedent and its consequent.

If
$$x - z : y - z = x^2 : y^2,$$

shew that

$$x + z : y + z = \frac{x}{y} + 2 : \frac{y}{x} + 2.$$

11. Shew how to insert two geometrical means between x^m and y^m .

If xy , y^2 , z^2 be in arithmetical progression, shew that y , z , $2y - x$ are in geometrical progression.

12. Sum to 10 terms each of the series:

$$(a) \quad 6\frac{3}{4} - 3\frac{1}{4} + 1\frac{1}{4} - \dots$$

$$(\beta) \quad 9 - 5\frac{1}{4} - 19\frac{1}{4} - \dots$$

ANSWERS.

SECOND GENERAL EXAMINATION.

WEDNESDAY, *November 26, 1884.*

STATICS. (A.) (Page 140.)

- | | |
|--------------------------------|--|
| 1. 7 ft. 4 in. and 5 ft. 4 in. | 3. $4\frac{1}{8}$ in. from the top of the cross-bar. |
| 7. 1 ft. 5 in. and 1 ft. 4 in. | 10. 3 ft. |

STATICS. (B.) (Page 141.)

- | | |
|---|-------------|
| 1. 6 ft. 5 in. and 2 ft. 4 in. | |
| 3. $\frac{13\sqrt{2}}{4}$ in. from the corner common to both squares. | |
| 7. 1 ft. 2 in. and 1 ft. 1 in. | 10. 19 lbs. |

THURSDAY, *November 27, 1884.*

HYDROSTATICS AND HEAT. (A.) (Page 142.)

- | | | | |
|----------------------|-----------------------|--------------|------------------|
| 3. 2 and 6 | 4. 46 lbs. | 5. 12 inches | 7. $4^{\circ}R.$ |
| 9. 153 cubic inches. | 10. $536.3^{\circ}C.$ | | |

HYDROSTATICS AND HEAT. (B.) (Page 143.)

- | | | | |
|----------------------|-------------------------|---------------------------|------------------|
| 3. 2 and 4. | 4. $31\frac{1}{2}$ lbs. | 5. $9\frac{1}{2}$ inches. | 7. $8^{\circ}R.$ |
| 9. 200 cubic inches. | 10. $79^{\circ}C.$ | | |

FRIDAY, *November 28, 1884.*

ALGEBRA. (A.) (Page 149.)

- | | | | |
|---|----------------------------------|--|----------------------------------|
| 1. (i) $x = 1\frac{1}{2}$; | (ii) $x = 4$; | (iii) $x = 15, y = 6$; | (iv) $x = 2$ or $-\frac{1}{2}$. |
| 2. 9 and 10. | 3. 10 of each kind. | | |
| 4. (i) $x = \frac{1}{8}, y = \frac{1}{2}$; | (ii) $x = 3$ or $-\frac{1}{3}$; | (iii) $x = \frac{a^2}{b}, y = \frac{b^2}{a}$. | |
| 6. £9900; £90 and £110. | 9. 12s. | 10. 12 and $\frac{1}{11}$. | |
| 11. (i) 27; | (ii) -1705; | (iii) 9. | 12. 5 and 45. |

ALGEBRA. (B.) (Page 150.)

1. (i) $x = 2\frac{1}{2}$; (ii) $x = 3$; (iii) $x = 6, y = 15$; (iv) $x = \frac{1}{2}$ or -2 .
 2. 8 and 9. 3. 10 of each kind.
 4. (i) $x = \frac{1}{4}, y = \frac{1}{8}$; (ii) $x = 4$ or -1 ; (iii) $x = \frac{a^2}{b}$ or $b, y = \frac{b^2}{a}$ or a .
 6. £9975; £95 and £105. 9. 8s. 10. 16.
 11. (i) 29; (ii) -1023 ; (iii) $1\frac{1}{2}$. 12. 3 and 75.

PREVIOUS EXAMINATION.

FRIDAY, December 5, 1884. 12 $\frac{1}{2}$ —3.

ALGEBRA. ADDITIONAL. (A) (Page 154.)

3. (1) 480; (2) n ; (3) 17955; (4) 32. 4. 5, 6, 7.
 5. 5, 20, 80, or $-9, -4\frac{1}{2}, -2\frac{1}{4}$. 6. 40 men; 80 days.
 7. 4; $3\frac{1}{2}$. 8. $a + (r-1)(\beta - a)$. 9. 2·5105450.

ALGEBRA. ADDITIONAL. (B.) (Page 155.)

3. (1) 483; (2) m ; (3) 17955; (4) 27. 4. 4, 5, 6.
 5. 7, 21, 63. 6. 40 men; 80 days. 7. 4; $3\frac{1}{2}$.
 8. $a + \frac{\beta - a}{r-1}$. 9. 2·8115750.

FRIDAY, December 12, 1884. 9—11 $\frac{1}{2}$.

ARITHMETIC. (A) (Page 190.)

1. 660539. 2. (1) 362 p. 26 gal. 2 qts. 1 pt. (2) 15 a. 3 r. 10 $\frac{1}{2}$ p. 3. 850.
 4. (a) $\frac{1}{10}$, (b) 1·259525. 5. £1. 12s. 10 $\frac{3}{4}$ d. 7. £82. 0s. 3 $\frac{1}{2}$ d. 8. 10 months.
 9. 93 yds. 2 ft. 6 $\frac{3}{4}$ in. 10. £630. 11. 166 $\frac{1}{2}$.

ARITHMETIC. (B) (Page 191.)

1. 582216. 2. (1) 1843 p. 5 yds. 1 ft. 3 in. (2) 36 a. 2 r. 1 $\frac{1}{2}$ p. 3. 1700.
 4. (a) $\frac{7}{10}$, (b) 50381. 5. 16s. 3 $\frac{1}{2}$ d. 7. £184. 10s. 7 $\frac{1}{2}$ d. 8. £30.
 9. 83 yds. 1 ft. 3 in. 10. £1155. 11. 9 $\frac{1}{2}$.

FRIDAY, December 12, 1884. 12½—3.

For candidates under the old regulations.

ELEMENTARY ALGEBRA. (A.) (Page 192.)

1. $a + c$; 216.
2. $2x^2 - 4xy + 5y^2$.
3. (α) $x^2(x - 12y)(x - 7y)$,
(β) $9(x - 4y)(x + 4y)(x - 2y)(x + 2y)$, (γ) $(1 - 4xy^2)(1 + 4xy^2 + 16x^2y^4)$.
4. (α) $\frac{x^2 + 2y^2}{x^2 + 8y^2}$, (β) $\frac{1}{1 - x}$.
5. $x^2 - 5xy + 7y^2$.
6. $2x^2 - 7xy + 11y^2$.
7. a^2 .
8. (α) $x = 7$, (β) $x = 9$, or $-6\frac{2}{3}$.
9. (α) $x = 1$, $y = 6$,
(β) $x = 10$, $y = 9$.
10. $x : y :: 5 : 4$.
12. $y = \pm \frac{1}{3}$.

ELEMENTARY ALGEBRA. (B.) (Page 193.)

1. $a + 6c$; -76.
2. $2x^2 + 9xy - 4y^2$.
3. (α) $x(x - 12y^2)(x - 5y^2)$,
(β) $(x - 3y)(x + 3y)(5x - y)(5x + y)$, (γ) $(1 - 3xy^2)(1 + 3xy^2 + 9x^2y^4)$.
4. (α) $\frac{x^2 + 2y^2}{x^2 + 9y^2}$, (β) $-\frac{2x + 1}{x + 1}$.
5. $x^2 - 7xy + 9y^2$.
6. $x^2 - 9xy + 7y^2$.
7. a .
8. (α) $x = 9$, (β) $x = 2$, or $-1\frac{1}{2}$.
9. (α) $x = 6$, $y = 1$;
(β) $x = 6$, $y = 5$.
10. $x : y :: 7 : 2$.
12. $y = \pm \frac{1}{2}$.

FRIDAY, December 12, 1884. 12½—3.

For candidates under the new regulations.

ELEMENTARY ALGEBRA. (A.) (Page 195.)

1. $a + c$; 216.
2. $2x^2 - 4xy + 5y^2$.
3. (α) $\frac{x^2 + 2y^2}{x^2 + 8y^2}$,
(β) $\frac{1}{1 - x}$.
4. $x^2 - 5xy + 7y^2$.
5. a^2 .
6. (α) $x = 7$,
(β) $x = 9$, or $-6\frac{2}{3}$.
7. (α) $x = 1$, $y = 6$, (β) $x = 10$, $y = 9$.
8. The distance between A and B is $13\frac{1}{2}$ miles.
9. The length and breadth of the rectangle are 9 inches and 8 inches respectively.
12. (α) $8\frac{27}{32}$,
(β) $-2497\frac{1}{2}$.

ELEMENTARY ALGEBRA. (B.) (Page 196.)

1. $a + 6c$; -76.
2. $2x^2 + 9xy - 4y^2$.
3. (α) $\frac{x^2 + 2y^2}{x^2 + 9y^2}$,
(β) $-\frac{2x + 1}{x + 1}$.
4. $x^2 - 7xy + 9y^2$.
5. a .
6. (α) $x = 9$, (β) $x = 2$, or $-1\frac{1}{2}$.
7. (α) $x = 6$, $y = 1$, (β) $x = 6$, $y = 5$.
8. The distance between A and B is 12 miles.
9. The length and breadth of the rectangle are 16 feet and 15 feet respectively.
12. (α) $4\frac{13}{16}$,
(β) $-551\frac{1}{2}$.

MATHEMATICAL TRIPOS.

PART III.

MONDAY, January 5, 1885. 9 to 12.

GROUP B.

1. PROVE that the Zonal Surface Harmonic P_n satisfies the difference equation

$$nP_n = (2n-1)\mu P_{n-1} - (n-1)P_{n-2}.$$

Shew how the Solid Zonal Harmonics are associated with the Surface Harmonics.

X'_n is the Solid Zonal Harmonic of positive order n having the axis of z for its axis and the origin of coordinates for its origin; X_m is the Solid Zonal Harmonic of positive order m having the same axis and a point distant a from the origin for its origin; prove that

$$X'_n = X_n + na X_{n-1} + \frac{n \cdot n-1}{1 \cdot 2} a^2 X_{n-2} + \dots + na^{n-1} X_1 + a^n.$$

The corresponding Solid Zonal Harmonic of negative order being denoted by Y'_n , prove that, for points included within any sphere whose radius is less than a and whose centre is the new origin,

$$Y'_n = \frac{1}{a^{n+1}} \left[1 - \frac{n+1}{n!} \frac{X_1}{a} + \frac{n+2}{2!n!} \frac{X_2}{a^2} - \frac{n+3}{3!n!} \frac{X_3}{a^3} + \dots \right].$$

Obtain the expression for Y'_n for points outside any sphere whose radius is greater than a and whose centre is the new origin in the form

$$Y'_n = Y_n - \frac{n+1}{n!} a Y_{n+1} + \frac{n+2}{2!n!} a^2 Y_{n+2} - \frac{n+3}{3!n!} a^3 Y_{n+3} + \dots$$

2. Explain Kirchhoff's kinetic analogue to the statics of a bent wire.

A uniform wire in the shape of a helix is pushed into a uniform tube in the shape of a different helix and of the same length, which the wire just fits; investigate the shape of the new helix formed by the combination, and point out the kinetic analogue.

3. Establish the equations in the Planetary Theory

$$\frac{da}{dt} = \frac{2}{na} \frac{dR}{d\epsilon}, \quad e \frac{d\varpi}{dt} = \frac{b}{na^3} \frac{dR}{d\epsilon}.$$

Prove that, if the disturbance is due only to a resisting medium producing retardation kv^m/r^p and if u denote the excentric anomaly, then

$$\frac{da}{du} = -2ka^{m-p} n^{m-2} (1+e \cos u)^{\frac{1}{2}(m+1)} (1-e \cos u)^{-\frac{1}{2}(m-1)-p},$$

$$\frac{de}{du} = -2ka^{m-p-1} n^{m-2} (1-e^2) \cos u (1+e \cos u)^{\frac{1}{2}(m-1)} (1-e \cos u)^{-\frac{1}{2}(m-1)-p},$$

$$e \frac{d\varpi}{du} = -2ka^{m-p-1} n^{m-2} (1-e^2)^{\frac{1}{2}} \sin u (1+e \cos u)^{\frac{1}{2}(m-1)} (1-e \cos u)^{-\frac{1}{2}(m-1)-p}.$$

MONDAY, January 5, 1885. 9 to 12.

GROUP C.

1. EXPLAIN the Hypothesis of Parallel Sections in Hydraulics, and prove on this hypothesis that the rate at which liquid starting from rest, passes through a vase kept constantly full is

$$\left(\frac{2gh}{\frac{1}{K^2} - \frac{1}{A^2}} \right)^{\frac{1}{2}} \tanh \lambda t,$$

A denoting the horizontal sectional area of the vase at the surface, K at the aperture, h the depth of the liquid, and λ a constant depending on the shape of the vase.

Prove that liquid of density ρ flowing with mean velocity U through a thin elastic tube of radius a will throw the surface of the tube into slight stationary corrugations, of which the number to the unit of length is

$$\left(\frac{2\rho a U^2 - \lambda}{2\pi a T} \right)^{\frac{1}{2}},$$

λ denoting the modulus of elasticity of the substance of the tube, and T the total tension of the tube.

2. Prove that in addition to satisfying the equation of continuity and the boundary conditions, the velocity function ϕ of waves of small displacement in still water must satisfy the condition

$$l \frac{d\phi}{dz} = \phi + \text{const.},$$

at the free surface $z=h$, l denoting the length of the simple equivalent pendulum.

Shew that (corresponding to Kelland's solution for progressive waves in a horizontal rectangular canal) for a solution in a canal the sides of which are inclined at 30° to the horizon, we may put

$$\begin{aligned} \phi = & A \cos \sqrt{2} (mx - nt) \{ \cosh my \sinh m (z - \alpha) \\ & - \cosh \tfrac{1}{2} m (y - z \sqrt{3}) \sinh \tfrac{1}{2} m (y \sqrt{3} + z + 2\alpha) \\ & + \cosh \tfrac{1}{2} m (y + z \sqrt{3}) \sinh \tfrac{1}{2} m (y \sqrt{3} - z - 2\alpha) \}, \end{aligned}$$

the axis of x being in the bottom corner of the canal; and then

$$m^2 l^2 = 1 - \frac{\sqrt{3} \sinh m h \sqrt{3}}{\sinh 3mh},$$

subject to the condition

$$(2 - \sqrt{3}) \cosh (3 + \sqrt{3}) mh + (2 + \sqrt{3}) \cosh (3 - \sqrt{3}) mh - \cosh (2 mh \sqrt{3}) - 3 = 0.$$

3. Plane waves of homogeneous light of wave length λ impinging normally on a diaphragm are diffracted through an aperture in the diaphragm and received on a parallel plane screen at a distance d . Prove that if the aperture consist of a circular annulus (i) of small breadth and mean radius a , the light on the screen will be distributed in concentric circles such that the intensity on a circle of radius x will be proportional to the square of

$$J_0\left(\frac{2\pi ax}{\lambda d}\right);$$

(ii) if the internal and external radii of the annulus be a and A , then the intensity of light on the screen on a circle of radius x will be proportional to the square of

$$\frac{A}{x} J_1\left(\frac{2\pi Ax}{\lambda d}\right) - \frac{a}{x} J_1\left(\frac{2\pi ax}{\lambda d}\right).$$

4. A uniform plate is in equilibrium under the action of a force Z per unit mass perpendicular to the plate. Shew that the displacement z of a point xy is given by the equation

$$A\left(\frac{d^4 z}{dx^4} + 2\frac{d^4 z}{dx^2 dy^2} + \frac{d^4 z}{dy^4}\right) = Z,$$

where A is the cylindrical rigidity.

A uniform rectangular board of length $2a$, breadth $2b$, and mass M is hinged all along its four edges to a rigid horizontal frame. Show that a possible form of the board when in equilibrium is given by

$$32 Aabz = Mg(x^2 - a^2)(y^2 - b^2),$$

the origin being at the centre and the axes parallel to the edges.

Find the distribution of couples which must be applied to the edges to maintain this configuration.

MONDAY, January 5, 1885. 9 to 12.

GROUP D.

1. STATE the second Law of Thermodynamics, and prove that the efficiency of an engine working between given temperatures is greatest when the engine is reversible.

Prove also that the entropy of a given system tends continually to a maximum.

Prove that if the entropy and energy of the working substance be represented by rectangular co-ordinates, then along an isenergetic the rate of increase of volume per unit of entropy varies directly as the absolute temperature and inversely as the pressure, and along an isentropic the rate of increase of volume per unit of energy varies inversely as the pressure.

2. Prove the equation

$$4\pi(\rho - K\rho') + \frac{dK}{dx} \frac{dV}{dx} + \frac{dK}{dy} \frac{dV}{dy} + \frac{dK}{dz} \frac{dV}{dz} = 0,$$

where V is the potential at any point of a dielectric, K the specific inductive capacity, ρ the true and ρ' the apparent electrification.

A condenser is formed of two concentric spherical conductors of radii a and c , separated by two dielectrics bounded by a concentric sphere of radius b . Prove that if in one dielectric K is μ/r^2 and in the other μ'/r^2 , then the capacity is

$$\frac{\mu\mu'}{\mu'(b-a) + \mu(c-b)},$$

where a, b, c are in ascending order; and find the apparent electrification on the surface of separation of the dielectrics.

3. State the experimental law of induced magnetism in soft iron, and distinguish between paramagnetic and diamagnetic bodies.

Prove that (1) the induced magnetism is both lamellar and solenoidal, (2) a diamagnetic body placed in a more strongly diamagnetic medium behaves as if it were paramagnetic.

A solid sphere of soft iron is surrounded by a concentric circular wire of radius b in the plane of a great circle, carrying a current of strength I . Prove that the magnetic potential inside the sphere is

$$2\pi I \left\{ 1 - \frac{3}{\mu+1} \frac{r}{b} P_1 + \sum_{i=1}^{\infty} (-1)^{i+1} \frac{4i+3}{(\mu+1)(2i+1)+1} \cdot \frac{1.3.5\dots 2i-1}{2.4.6\dots 2i} \frac{r^{2i+1}}{b^{2i+1}} P_{2i+1} \right\},$$

where μ is the magnetic permeability.

Also find the potential outside the sphere.

MONDAY, January 5, 1885. 1½ to 4½.

GROUP A.

1. SHew that the anharmonic ratio of the pencil formed by four tangents to a cubic drawn from any point on the curve is constant.

Prove that if x, y, z, w are the perpendiculars on the sides a, b, c, d of a quadrilateral, the curve whose equation is

$$\frac{a}{x} + \frac{b}{y} + \frac{c}{z} + \frac{d}{w} = 0$$

is a circular cubic.

2. Define a geodesic line on a surface and prove that the osculating plane at any point of the geodesic contains the normal to the surface.

A curve is drawn making a constant angle α with the axis of a paraboloid of revolution; prove that

(i) its projection on a plane perpendicular to the axis is the involute of a circle of radius $l \cot \alpha$;

(ii) its radii of curvature ρ and torsion σ are given by the equations

$$\rho^2 \sin^2 \alpha = \sigma^2 \sin^2 \alpha \cos^2 \alpha = r^2 - l^2 \cot^2 \alpha,$$

where r is the distance of the point from the axis and l is the semi-latus rectum of the generating parabola.

3. Prove the following relations among Eulerian integrals:

$$(i) \quad B(l, m) = \frac{\Gamma(l) \Gamma(m)}{\Gamma(l+m)};$$

$$(ii) \quad \frac{\Gamma'(x)}{\Gamma(x)} - \Gamma'(1) = \left(1 - \frac{1}{x}\right) + \left(\frac{1}{2} - \frac{1}{x+1}\right) + \left(\frac{1}{3} - \frac{1}{x+2}\right) + \dots$$

Prove that, if $D(n)$ denote the number of divisors of n , then as n increases

$$\frac{D(1) + D(2) + D(3) + \dots + D(n)}{n} - \log n$$

ultimately becomes equal to $1 + 2 \Gamma'(1)$.

4. Prove that

$$\operatorname{sn}(u+v) \operatorname{sn}(u-v) = \operatorname{sn}^2 u - \operatorname{sn}^2 v +$$

$$\operatorname{sn}(u+v) \operatorname{cn}(u-v) = \operatorname{sn} u \operatorname{cn} u \operatorname{dn} v + \operatorname{sn} v \operatorname{cn} v \operatorname{dn} u +$$

$$\operatorname{sn}(u+v) \operatorname{dn}(u-v) = \operatorname{sn} u \operatorname{dn} u \operatorname{cn} v + \operatorname{sn} v \operatorname{dn} v \operatorname{cn} u +$$

the denominator being in each case

$$1 - k^2 \operatorname{sn}^2 u \operatorname{sn}^2 v.$$

Shew that if u_1, u_2, u_3, u_4 be any arguments and x, y, z respectively denote

$$\frac{\operatorname{sn}(u_4 - u_1) \operatorname{sn}(u_4 - u_2)}{\operatorname{sn}(u_4 + u_1) \operatorname{sn}(u_4 + u_2)}, \quad \frac{\operatorname{sn}(u_4 - u_2) \operatorname{sn}(u_2 - u_1)}{\operatorname{sn}(u_4 + u_2) \operatorname{sn}(u_2 + u_1)}, \quad \frac{\operatorname{sn}(u_4 - u_3) \operatorname{sn}(u_1 - u_2)}{\operatorname{sn}(u_4 + u_3) \operatorname{sn}(u_1 + u_2)},$$

then

$$xyz + x + y + z = 0.$$

MONDAY, *January 5*, 1885. 1½ to 4½.

GROUP C.

1. PROVE that the motion of a sphere through an infinite mass of homogeneous liquid is the same as if the liquid were removed and the inertia of the sphere increased by half that of the liquid displaced.

The liquid contains a fixed sphere of radius b and a sphere of radius a and mass M fastened to a spiral spring performing small oscillations in the line joining the spring to the centre of the sphere; prove that if a and b are so small that we may neglect powers of a/c and b/c above the sixth, the time of oscillation is

$$T \left\{ 1 + \frac{1}{2} \frac{M_1}{M} \left(\frac{ab}{c^2} \right)^2 \right\},$$

where M_1 is the mass of the liquid displaced by the moving sphere, T the time of oscillation if the fixed sphere were removed from the liquid, and c the mean distance of the centres of the spheres.

2. A uniform string of length $2l$ is stretched with tension T between two fixed points. Prove that if the string is initially pulled aside by a force Y at a point distant b from one end, the motion of the string is given by

$$y = \frac{1}{l\rho} Y \sum_{s=1}^{\infty} \sin \frac{s\pi b}{2l} \sin \frac{s\pi x}{2l} \frac{\cos s\pi t}{s},$$

where ρ is the mass per unit length, a the velocity of propagation of waves along the string and $2nl = s\pi a$.

The string has its ends fastened to two masses, each equal to M , which are kept in place by springs of strength μ , and it has a mass M' fastened at its middle point. Prove that, if M' is plucked transversely, the frequency of the vibrations of the string is $ma/2\pi$ where

$$m \tan ml = T \frac{2(Mm^2a^2 - \mu) + M'm^2a^2}{M'a^2(Mm^2a^2 - \mu) - 2T^2}.$$

3. State the assumptions on which Fresnel's theory of double refraction is founded, and shew that the equation of the wave-surface in a crystal is

$$\frac{a^2x^2}{r^2 - a^2} + \frac{b^2y^2}{r^2 - b^2} + \frac{c^2z^2}{r^2 - c^2} = 0,$$

where a , b , c are the three optical constants of the crystal.

Prove that

(1) The planes through the normal to the wave-front and the two directions of the corresponding vibrations bisect the angles between the planes through the same normal and the optic axes.

(2) The planes through a radius vector of the wave-surface and the two corresponding directions of vibration bisect the angles contained by the planes through the same radius vector and the two axes of external conical refraction.

4. Define k the elasticity of volume, and n the rigidity of a homogeneous isotropic elastic solid; and prove that three simple longitudinal strains e, f, g in three directions at right angles to each other require corresponding tensions P, Q, R , where

$$P = (k + \frac{1}{3}n)e + (k - \frac{2}{3}n)(f + g), \quad Q = \dots, \quad R = \dots;$$

and

$$e = \left(\frac{1}{3n} + \frac{1}{9k}\right)P - \left(\frac{1}{6n} - \frac{1}{9k}\right)(Q + R), \quad f = \dots, \quad g = \dots$$

Prove that a vertical elastic cylinder, fitting accurately a hole in a rigid substance when gravity is neglected, will under gravity, when resting on the bottom of the hole; produce a hydrostatic pressure on the sides of the hole due to that of a liquid of density $(k - \frac{2}{3}n)/(k + \frac{1}{3}n)$ times the density of the substance of the cylinder.

MONDAY, January 5, 1885. 1½ to 4½.

GROUP D.

1. PROVE that the series

$$\begin{aligned} \frac{1}{l} \int_0^l \frac{f(v) + f(-v)}{2} dv + \frac{2}{l} \sum_{n=1}^{\infty} \cos \frac{n\pi x}{l} \int_0^l \frac{f(v) + f(-v)}{2} \cos \frac{n\pi v}{l} dv \\ + \frac{2}{l} \sum_{n=1}^{\infty} \sin \frac{n\pi x}{l} \int_0^l \frac{f(v) - f(-v)}{2} \sin \frac{n\pi v}{l} dv \end{aligned}$$

is equal to $f(x)$ between the limits $x = +l$ and $x = -l$; and trace the curve represented by the series for values of x outside these limits.

Prove that the equation

$$\frac{\pi^2}{24} = -\cos \frac{1}{2}(x+y) \cos \frac{1}{2}(x-y) + \frac{1}{2^2} \cos \frac{2}{2}(x+y) \cos \frac{2}{2}(x-y) - \frac{1}{3^2} \cos \frac{3}{2}(x+y) \cos \frac{3}{2}(x-y) - \dots$$

represents a series of circles of radius π ; and trace them.

2. Shew how Wheatstone's bridge may be used for comparing the capacities of two condensers, and investigate the necessary formula.

Shew that, in order to obtain the capacity of a condenser in the form of a telegraph line of length l with the distant end insulated, we must take as the potential $\frac{V}{\lambda l} \tanh \lambda l$ instead of V , where V is the potential of the near end of the line and λ^2 is the ratio of the conduction to the leakage resistance.

Investigate the corresponding correction for the case of a line which includes a given length of sub-marine cable.

3. Prove that the action between two elements of electric currents is represented by

$$\frac{ii' ds ds'}{r^2} \left(\frac{1}{2} \cos \alpha \cos \alpha' + \sin \alpha \sin \alpha' \cos \theta \right).$$

Prove that the above expression may also be written

$$\frac{1}{2} ii' \frac{ds}{\cos \alpha} d \frac{\cos^2 \alpha}{r}.$$

Prove that the tangential force exerted by that portion of a current, which begins at a point O and extends to infinity, on a portion of a rectilinear current is

$$\frac{1}{2} ii' \left(\log \frac{s_2 + r_2}{s_1 + r_1} - \frac{s_2}{r_2} + \frac{s_1}{r_1} \right),$$

s_1 and s_2 being the distances of the extremities of the rectilinear current from the foot of the perpendicular on it from O and r_1 and r_2 their distances from O .

TUESDAY, January 6, 1885. 9 to 12.

1. SHEW that if three generators of $\frac{x^2}{a^2} + \frac{y^2}{b^2} - \frac{z^2}{c^2} = 1$ of the same system be mutually at right angles and be made the edges of a rectangular parallelepiped, then three of the edges of this parallelepiped which intersect in a point A not on the surface are normals to the three confocals to $\frac{x^2}{a^2} + \frac{y^2}{b^2} - \frac{z^2}{c^2} = -1$, which pass through A .

2. Prove that the projection of a geodesic on a surface of revolution on a plane perpendicular to the axis is in polar coordinates

$$\frac{1}{r^2} = \frac{\text{cn}^2 \mu \theta}{\alpha^2} + \frac{\text{sn}^2 \mu \theta}{\beta^2},$$

if the meridian curve of the surface is the roulette of the focus of an ellipse rolling on the axis, α and β denoting the greatest and least values of the focal distances.

Shew that, if the geodesic cuts the meridian plane at its maximum distance at an angle γ , then

$$\mu = \frac{\beta}{\alpha + \beta} \cot \gamma, \quad k^2 = \frac{\alpha^2 - \beta^2}{\beta^2} \tan^2 \gamma.$$

3. The four arguments u_1, u_2, u_3, u_4 are such that their sum is zero, and s_μ, c_μ, d_μ are the elliptic functions of the argument u_μ ; $E(u)$ is the second elliptic integral of argument u ; prove that

$$\{E(u_1) + E(u_2) + E(u_3) + E(u_4)\}^2 = k^2 (s_1^2 + s_2^2 + s_3^2 + s_4^2 + 2c_1c_2c_3c_4 - 2s_1s_2s_3s_4 - 2).$$

4. Shew that the time of oscillation from rest to rest of a pendulum through an angle of three hundred degrees is $\sqrt{3}$ times that of oscillation through an angle of sixty degrees.

5. A right cone is capable of revolving freely round its axis which is vertical. A groove is to be cut in the surface of the cone such that a particle of mass m sliding down the groove without initial velocity from a given point may in the shortest time reach a given point in the horizontal plane through the base of the cone; shew that the differential equation of the particle's path projected on the horizontal plane is

$$\left(\frac{dr}{d\theta}\right)^2 = r^2 \left(\frac{r^2}{k^2} + 1\right) \left\{ \frac{r^2 \left(\frac{r^2}{k^2} + 1\right)}{(r - r_0)c} - 1 \right\} \sin^2 \alpha,$$

where α is the semi-vertical angle of the cone and mk^2 its moment of inertia about its axis.

6. A system, formed by jointing together four equal gyrostats so that their axes form a rhombus, is suspended by one joint, and a weight is suspended from the other joint. If the gyrostats be now animated with equal given angular velocities, all pointing upwards on the right-handed system, find the position of equilibrium of the weight and prove that it is in stable equilibrium.

7. Prove that
$$\mu \frac{dP_n}{d\mu} - \frac{dP_{n-1}}{d\mu} = nP_n,$$

where P_n is a zonal harmonic.

8. Prove that in a horizontal rectangular trough, the sides of which are equally inclined at 45° to the vertical, wave-motion across the trough for water of depth h in the middle is given by the velocity function (omitting constant and periodic time factors)

$$\phi = \sin my \sinh mz + \sin mz \sinh my,$$

where $ml = \tanh mh = \tan mh$;

or by the velocity function

$$\phi = \cos my \cosh mz + \cos mz \cosh my,$$

where $ml = \coth mh = -\cot mh$;

the axis of x being horizontal and in the corner of the trough, l denoting the length of the simple equivalent pendulum.

9. A soap-bubble of finite thickness in free space containing air inside it is performing small oscillations radially under the action of its surface tension T and the pressure of the contained air. Prove that the length l of the equivalent pendulum for vibrations so slow that the contained air may be assumed to obey Boyle's law is given by the equation

$$3Ma^3b^3g = 8l\pi T(b^3 + ab + a^3)(2b^3 + ab + a^3)(b^3 + ab - a^3),$$

where a and b are the internal and external radii of the shell, and M its mass.

10. Calculate the vibrations of an endless uniform string placed round a smooth cone whose axis is vertical.

11. A given mass of air is at rest in a circular cylinder of radius c under the action of a constant force to the axis. Shew that if the force suddenly cease to act, then the velocity function at any subsequent time varies as

$$\sum \frac{1}{k^3} \frac{J_0(kr)}{J_0(kc)} \sin kat,$$

where a is the velocity of sound in air, the summation extends to all values of k satisfying $J_1(kc) = 0$, and the square of the condensation is neglected.

12. A hollow spherical shell of elastic material, whose density is ρ , and internal and external radii a and b is vibrating radially. Prove that the frequency is

$$\frac{\lambda \{k + \frac{1}{3}n\}^{\frac{1}{2}}}{2\pi\rho^{\frac{1}{2}}},$$

where λ and μ are given by the equations

$$\mu^2 = \frac{9k}{3k + 4n},$$

$$\frac{(3 - \mu^2)\lambda a - (3 - \mu^2 - \lambda^2 a^2) \tan \lambda a}{3 - \mu^2 - \lambda^2 a^2 + (3 - \mu^2)\lambda a \tan \lambda a} = \frac{(3 - \mu^2)\lambda b - (3 - \mu^2 - \lambda^2 b^2) \tan \lambda b}{3 - \mu^2 - \lambda^2 b^2 + (3 - \mu^2)\lambda b \tan \lambda b},$$

and k and n are the resistance to compression and the rigidity respectively.

13. Homogeneous light of wave length λ emanates from a point and falls on a screen, at a distance a from the point, in which there is a circular hole of radius r , the line joining the point to the centre of the hole being perpendicular to the screen. After passing through the hole the light falls on a parallel screen at a distance b from the former. A circular ring of glass of thickness τ and refractive index μ and outer and inner radii r and r' is now placed in the hole. Find the change in the intensity of the illumination at the point of the screen opposite the centre of the hole, and shew that this point will be black provided $r^2 = 2r'^2$ and

$$(\mu - 1)\tau = \frac{\lambda}{2}(2n + 1) - \frac{a + b}{4ab} r^2,$$

where n is any integer.

14. An infinite dielectric is bounded by an infinite conducting plane which is maintained at a potential λr^2 , where r is the distance from a point O of the plane. Prove that, if the specific inductive capacity of the dielectric varies as the distance from the plane, the potential at any point is $\lambda(r^2 - z^2)$, where z is the distance from the plane and r that from an axis through O perpendicular to the plane.

15. A perfectly flexible wire is fastened to two fixed points and carries a current of given strength. Prove that in a uniform magnetic field it assumes the shape of a circular helix, and in a central field that of a geodesic on a cone.

16. A body in the shape of a spherical shell whose bounding radii are a and b and electrical conductivity $k r^{-2}$, where r is the distance from the centre, has its inner and outer surfaces kept at potentials $\sum A_i Y_i$ and $\sum B_i Y_i$ respectively, where Y_i is a surface harmonic of the i^{th} order. Prove that when the motion of the electricity becomes steady the potential at any point is

$$\sum \left\{ \frac{A_i a^i - B_i b^i}{a^{2i+1} - b^{2i+1}} r^{i+1} + \frac{B_i a^{i+1} - A_i b^{i+1}}{a^{2i+1} - b^{2i+1}} \cdot \frac{a^i b^i}{r^i} \right\} Y_i.$$

TUESDAY, January 6, 1885. 1½ to 4½.

GROUP A.

1. PROVE that there are three classes of integrals satisfying the partial differential equation of the first order, and indicate their method of derivation. Give a geometrical interpretation of the relations between them.

Solve the equations:

- (i) $p^2 = z^2 (1 - pq)$;
- (ii) $z + 1 = x(x + p) + y(y + q)$;
- (iii) $(z - p - qy)^2 = 1 + p^2 + q^2$.

Obtain an integral of the equation

$$p(ny - mx) + q(lz - nx) = mx - ly$$

which is such that the surface represented is a quadric and has for its section by the plane of xy a conic of eccentricity e having its centre on the line

$$(1 - e^2)(lx + my) + e^2 = 0.$$

2. Prove that the number of aszygetic invariants of the degree r belonging to the quantic of order n is the coefficient of x^{1-r} in the expansion in ascending powers of x of the expression

$$\frac{P(n+r)P(1)}{P(n)P(r)},$$

where $P(m) = (1-x)(1-x^2) \dots (1-x^{m-1})(1-x^m)$.

Shew that there are only two irreducible invariants of the quartic; and hence shew that every quantic has an invariant of the fourth degree.

Indicate any method of obtaining this invariant; and prove that for the quintic $(a, 0, c, d, e, f | x, y)^5$ it is $a^2 f^3 + 4acdf + 16ace^2 - 12ad^2e + 48c^2e - 32c^2d^2$.

3. Prove that a triply orthogonal system of surfaces intersect in lines of curvature on each other.

Shew that if the rectangular coordinates are expressed by the relations

$$\begin{aligned} x &= 2a \frac{\sin u}{1 + (w-v)^2 \sin^2 u} \{ \cos v - (w-v) \sin v \}, \\ y &= 2a \frac{\sin u}{1 + (w-v)^2 \sin^2 u} \{ \sin v + (w-v) \cos v \}, \\ z &= a \left\{ \log \tan \frac{1}{2} u + \frac{2 \cos u}{1 + (w-v)^2 \sin^2 u} \right\}, \end{aligned}$$

then

$$dx^2 + dy^2 + dz^2 = \frac{a^2}{\sin^2 u \{1 + (w-v)^2 \sin^2 u\}^2} \left[\{1 - (w-v)^2 \sin^2 u\} du^2 + 4(w-v)^2 \sin^4 u dv^2 + 4 \sin^4 u dw^2 \right].$$

Also prove the surface $u = \text{constant}$ is a sphere having its centre on the axis of z ; $w = \text{constant}$ is a surface of constant negative curvature $-1/a^2$; and $v = \text{constant}$ is a surface of revolution round the axis of z .

4. Shew how questions in probability may be solved by the integral calculus.

An elliptic disc is thrown upon an infinite plane ruled in squares, the side of a square being greater than the major axis of the disc. Determine the probability that the disc will not rest on a line of division.

TUESDAY, January 6, 1885. 1½ to 4½.

GROUP B.

1. WRITE down the potential of a solid homogeneous ellipsoid at any point, and prove that the mass may be arranged in confocal strata of equal density according to any law without altering the external attraction.

If inside the ellipsoid

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$$

the density at any point is $Pxyz$, the potential will be

$$4Pxyz \int_{\mu}^{\infty} \left(1 - \frac{x^2}{a^2 + \lambda} - \frac{y^2}{b^2 + \lambda} - \frac{z^2}{c^2 + \lambda} \right) \frac{\pi a^2 b^2 c^2 d\lambda}{(a^2 + \lambda)(b^2 + \lambda)(c^2 + \lambda)^{\frac{1}{2}}},$$

where μ is the positive root of

$$\frac{x^2}{a^2 + \mu} + \frac{y^2}{b^2 + \mu} + \frac{z^2}{c^2 + \mu} = 1$$

for external points; and $\mu = 0$ for internal points.

Prove that a distribution of matter on the surface of the ellipsoid of superficial density

$$Qxyz \left(\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} \right)^{\frac{1}{2}},$$

will have the same exterior equipotential surfaces; and determine the potential in the interior.

2. State and prove the principle of "Least Action" for a particle; and shew that, if A be the action and U be the force-function for motion in a plane, then the differential equation

$$\frac{1}{2} \left\{ \left(\frac{\partial A}{\partial x} \right)^2 + \left(\frac{\partial A}{\partial y} \right)^2 \right\} = U + H,$$

is satisfied, H being a constant. Explain how from a knowledge of the value of A the path of the particle can be obtained.

A particle is moving under the influence of two attractive forces of equal absolute intensity m and respectively varying inversely as the square of the distances from two fixed points S and H which are the foci of an ellipse of semiaxes a and b ; and it is projected from an extremity of and perpendicularly to the major axis of the ellipse with a velocity $2(ma)^{\frac{1}{2}}/b$; prove that the equation to the path is

$$\int_0^{\lambda} \frac{d\lambda}{[(a^2 + \lambda)(b^2 + \lambda)\{(a^2 + \lambda)^{\frac{1}{2}} - a\}]^{\frac{1}{2}}} = \int_{\mu}^{-b^2} \frac{d\mu}{\{-a(a^2 + \mu)(b^2 + \mu)\}^{\frac{1}{2}}},$$

where λ and μ are the elliptic co-ordinates of a point in the plane of motion.

3. Establish the differential equation in the Theory of the Figure of the Earth

$$k^3 \frac{d^2 M \epsilon}{dk^2} - \left\{ i(i+1) + \frac{4\pi k^4}{M} \frac{d\rho}{dk} \right\} M \epsilon = 0;$$

where ϵ denotes the ellipticity of a stratum of density ρ , originally spherical and of radius k , due to a solid harmonic disturbing function of order i , M denoting the mass contained by the stratum of mean radius k .

Prove that if ϵ is a given function of k , then M and consequently ρ are determined as functions of k by the equation

$$\log M = \frac{1}{2} \int \frac{i(i+1)\epsilon - k^2 \frac{d^2 \epsilon}{dk^2} dk}{\epsilon + k \frac{d\epsilon}{dk}} \frac{1}{k}.$$

Given $i = 4$, and $\rho = \rho_0 \cos qk^3$, prove that

$$\epsilon = 3\epsilon_0 \frac{\sin qk^3 - qk^3 \cos qk^3}{q^2 k^6 \sin qk^3}.$$

TUESDAY, January 6, 1885. 1½ to 4½.

GROUP D.

1. SHEW that the equation of conduction of heat in an æolotropic solid can always be reduced to the form

$$\frac{dV}{dt} = a^2 \frac{d^2 V}{dx^2} + b^2 \frac{d^2 V}{dy^2} + c^2 \frac{d^2 V}{dz^2};$$

and find the surface conditions in their most general form.

An infinite æolotropic solid whose specific heat per unit mass is unity is initially at zero temperature, and a quantity of heat Q is suddenly generated at the origin. Prove that the temperature at any subsequent time t at a point xyz is

$$\frac{Q}{8abc(\pi t)^{\frac{3}{2}}} e^{-\frac{1}{4t}(\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2})};$$

and find an expression for the rate at which the energy within the ellipsoid $\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = k^2$ is being dissipated at any time.

2. Explain the reasoning by which Thomson was led to the discovery of the electric convection of heat.

A uniform rod, whose length is l , cross section s , periphery p , internal and external conductivities for heat k and h respectively, capacity for heat C , density D and electrical resistance R is placed in a medium at temperature zero and has one end heated to temperature θ_0 , the other being kept at zero until the temperature at every point is permanent. An electrical current of strength I is now passed along the rod from the cold to the hot end. Shew that, when the temperature has again become permanent, the rise of temperature, due to the current at a point distant x from the cold end, is

$$\theta' = I^2 \frac{RS}{hp} + \frac{I\sigma\theta_0}{(hpKS)^{\frac{1}{2}}} \frac{\cosh x \left(\frac{hp}{KS}\right)^{\frac{1}{2}}}{\sinh l \left(\frac{hp}{KS}\right)^{\frac{1}{2}}},$$

where σ is the electric conductivity of heat and $\sigma \frac{d\theta'}{dx}$ is neglected.

In a circuit consisting of two metals, the specific heats of conductivity are algebraic functions of the temperature of the n^{th} degree. Shew that there cannot be more than n temperatures of inversion, and find the electromotive force of the circuit when they vary as the n^{th} power of the temperature.

3. Obtain the following equations of electromotive force in the electro-magnetic field

$$\begin{aligned} P &= c \frac{dy}{dt} - b \frac{dz}{dt} - \frac{dF}{dt} - \frac{d\psi}{dx}, \\ Q &= a \frac{dz}{dt} - c \frac{dx}{dt} - \frac{dG}{dt} - \frac{d\psi}{dy}, \\ R &= b \frac{dx}{dt} - a \frac{dy}{dt} - \frac{dH}{dt} - \frac{d\psi}{dz}. \end{aligned}$$

Prove that the magnetic potential of an electric current in a spherical solenoid of intensity i , at a point distant D from the centre, is

$$\frac{1}{2} \frac{\pi^2 r^2 i}{D^2 d} \cos e,$$

where r is the radius of the sphere, e the angle between the axis of the solenoid and D , and d the constant distance, measured on the surface of the sphere, between consecutive circuits of the solenoid, d being small compared with r , and r small compared with D .

A circular wire, of radius a , is placed with its centre on the axis of the solenoid and at a distance x from its centre, having its plane perpendicular to the axis. Shew that, if the intensity of the current i changes, the induced current in this wire will be

$$\frac{\pi^2 r^2 di}{Rd dt} \frac{a^2}{(x^2 + a^2)^{\frac{3}{2}}},$$

where R is the resistance of the wire, and the induction of the current on itself is neglected.

WEDNESDAY, January 7, 1885. 9 to 12.

SUBJECTS FOR ESSAYS.

[Each Candidate is not to send up more than two Essays.]

- A 1. Calculus of Variations.
- A 2. The principle of duality in Geometry.
- B 1. Attraction of Ellipsoids.
- B 2. The motion of the Moon's apsides in the Lunar Theory.
- C 1. Capillarity.
- C 2. Lateral Vibration of Bars.
- D 1. Mechanical condition of a Dielectric.
- D 2. Electro-magnetic Theory of Light.

WEDNESDAY, January 7, 1885. 1½ to 4½.

GROUP A.

1. PROVE that if Φ and Ψ be two covariants of any binary quantic U , then

$$\frac{\partial \Phi}{\partial x} \frac{\partial \Psi}{\partial y} - \frac{\partial \Psi}{\partial x} \frac{\partial \Phi}{\partial y}; \quad \frac{\partial^2 \Phi}{\partial x^2} \left(\frac{\partial \Psi}{\partial y} \right)^2 - 2 \frac{\partial^2 \Phi}{\partial x \partial y} \frac{\partial \Psi}{\partial x} \frac{\partial \Psi}{\partial y} + \frac{\partial^2 \Phi}{\partial y^2} \left(\frac{\partial \Psi}{\partial x} \right)^2,$$

are also covariants. How many covariants can thus be derived from two given covariants?

The Hessian $H(U)$ of any quantic $U = (a_0, a_1, \dots, a_n)(x, y)^n$ is taken to have the coefficient of the leading term independent of n ; prove that

$$\frac{H(U^n)}{U^n H(U)} = 1 - \left(\frac{n}{2n-1} \right)^2.$$

H is the Hessian, I the quadrianvariant and J the cubinvariant of a binary quartic U ; prove that

$$\frac{\partial^2 U}{\partial x^2} \left(\frac{\partial H}{\partial y} \right)^2 - 2 \frac{\partial^2 U}{\partial x \partial y} \frac{\partial H}{\partial x} \frac{\partial H}{\partial y} + \frac{\partial^2 U}{\partial y^2} \left(\frac{\partial H}{\partial x} \right)^2 = 48U(IH - JU).$$

2. Shew how to find the number and position of the real foci of a curve.

Prove that in curves of the third class the three tangents drawn from the three foci meet in a point.

Prove that the abscissa of the fourth focus of the curve

$$l\{x^2 + y^2\}^{\frac{1}{2}} + m\{(x-a)^2 + y^2\}^{\frac{1}{2}} + n\{(x+a)^2 + y^2\}^{\frac{1}{2}} = 0$$

is

$$\frac{2a(n^2 - m^2)}{l^2 - 2m^2 - 2n^2}.$$

3. Prove that if B_n be the n^{th} of Bernoulli's numbers

$$B_n = 4n \int_0^\infty \frac{x^{2n-1} dx}{e^{2\pi x} - 1};$$

and expand $\cot x$ and $\operatorname{cosec} x$ in a series of ascending powers of x .

Shew that $\operatorname{cosec}^m x$ when expanded in a series of ascending powers of x can have the coefficients of its positive powers expressed as linear functions of Bernoulli's numbers.

In particular prove that in the expansion of $\operatorname{cosec}^{2m} x$

(i) the coefficient of $x^{-2(m-r)}$ is

$$(-1)^r \frac{(2m-2r-1)!}{(2m-1)!} P_r;$$

and (ii) the coefficient of x^{2r} is

$$\frac{1}{2m-1!} \left(\frac{2^{2r+2m-1}}{r+m} B_{r+m} - P_1 \frac{2^{2r+2m-3}}{r+m-1} B_{r+m-1} + P_2 \frac{2^{2r+2m-5}}{r+m-2} B_{r+m-2} - \dots + (-1)^{m-1} P_{m-1} \frac{2^{2r+1}}{r+1} B_{r+1} \right);$$

where P_r is the sum of the products r together of the $m-1$ quantities

$$2^2, 4^2, 6^2, \dots, (2m-2)^2,$$

4. Prove that the equation

$$\frac{Mdy}{\{(1-y^2)(1-\lambda^2 y^2)\}^{\frac{1}{2}}} = \frac{dx}{\{(1-x^2)(1-k^2 x^2)\}^{\frac{1}{2}}},$$

(where M is a constant) can be satisfied by an equation of the form $Vy=U$, in which U and V are respectively odd and even rational integral functions of x whose degrees differ by unity; that in the case when the transformation is of odd order, we may write

$$V+U=(1+x)A^2, \quad V+\lambda U=(1+kx)C^2;$$

and in the case when the transformation is of even order, we may write

$$V+U=(1+x)(1+kx)B^2, \quad V+\lambda U=D^2;$$

where A, B, C, D are rational integral functions of x .

Prove that a transformation of the fourth order is

$$\frac{1-y}{1+y} = \frac{(1-x)(1-kx)}{(1+x)(1+kx)} \left(\frac{1-k^{\frac{1}{2}}x}{1+k^{\frac{1}{2}}x} \right)^2;$$

that the relation between the moduli k and λ is

$$1-\lambda^2 = \left(\frac{1-k^{\frac{1}{2}}}{1+k^{\frac{1}{2}}} \right)^4,$$

and that the value of M is $(1+k^{\frac{1}{2}})^{-2}$.

WEDNESDAY, January 7, 1885. 1½ to 4½.

GROUP B.

1. GIVE in the form of a series the definition of Bessel's function $J_n(x)$ when n is not integral, and verify that it satisfies the differential equation

$$\frac{d^2 y}{dx^2} + \frac{1}{x} \frac{dy}{dx} + \left(1 - \frac{n^2}{x^2}\right) y = 0.$$

Assuming that the same form holds for functions of positive and negative orders, prove that

$$\begin{aligned} \frac{dJ_n}{dx} &= -\frac{n}{x} J_n + J_{n-1}, \\ \frac{dJ_{-n}}{dx} &= -\frac{n}{x} J_{-n} - J_{1-n}, \end{aligned}$$

if n be positive.

Prove also that

$$J_n(x) J_{1-n}(x) + J_{n-1}(x) J_{-n}(x) = \frac{2}{\pi x} \sin n\pi.$$

2. Establish Euler's equations of motion in the form

$$A \frac{d\omega_1}{dt} - (B - C) \omega_2 \omega_3 = L \dots \dots \dots ;$$

and determine $\omega_1, \omega_2, \omega_3$ in terms of the time t by means of elliptic functions, when no forces act upon the body.

If the impressed forces reduce to a couple parallel to and λ times the resultant angular momentum, prove that

$$\begin{aligned} \omega_1 &= \Omega_1 e^{\lambda t} \operatorname{cn} \mu (e^{\lambda t} - 1), \\ \omega_2 &= -\left(\frac{A}{B} \frac{A - C}{B - C}\right)^{\frac{1}{2}} \Omega_1 e^{\lambda t} \operatorname{sn} \mu (e^{\lambda t} - 1), \\ \omega_3 &= \Omega_2 e^{\lambda t} \operatorname{dn} \mu (e^{\lambda t} - 1); \end{aligned}$$

where $\Omega_1, 0, \Omega_2$ are the initial values of $\omega_1, \omega_2, \omega_3$; and

$$\begin{aligned} \mu^2 &= \frac{(B - C)(A - C) \Omega_1^2}{AB \lambda^2}, \\ k^2 &= \frac{A}{C} \frac{A - B}{B - C} \frac{\Omega_1^2}{\Omega_2^2}. \end{aligned}$$

Prove that the momental ellipsoid still rolls on a fixed plane, and that a confocal ellipsoid will roll on a parallel plane which revolves with angular velocity proportional to $e^{\lambda t}$ about the axis of resultant angular momentum.

3. Prove that the potential outside a homogeneous oblate spheroid of mass M and small ellipticity ϵ at a point which is distant r from the centre and whose distance makes an angle θ with the axis of revolution is

$$Mr^{-1} - \frac{1}{2} Mk^2 \epsilon r^{-3} (3 \cos^2 \theta - 1)$$

where k is the mean radius of the spheroid.

Supposing this body to be Saturn and originally liquid, investigate the equation

$$\frac{1}{2} \epsilon - \frac{3}{2} \frac{mk^2}{Mc(c^2 - b^2)} = \frac{\omega^2 k^2}{M}$$

determining ϵ the ellipticity, due partly to its own rotation ω and partly to the disturbance caused by its ring, supposed to be a flat concentric circular disc, of uniform thickness and density and lying in the plane of the equator, of mass m and bounding radii $c \pm b$, where c is large compared with b . And then gravity at colatitude θ is to equatorial gravity in the ratio

$$1 + \epsilon \cos^2 \theta : 1.$$

WEDNESDAY, January 7, 1885. 1½ to 4½.

GROUP C.

1. DETERMINE the conditions to be satisfied in order that a mass of homogeneous gravitating liquid in the form of an ellipsoid, rotating with given angular velocity about a principal axis, may have a free surface of equal pressure, the liquid having a given constant molecular rotation parallel to this axis; and shew that the shape is the same when the axes are stationary (Dedekind's ellipsoid) as when there is no relative motion in the liquid (Jacobi's ellipsoid).

Prove that if a rigid ellipsoidal shell be filled with two homogeneous gravitating liquids of different densities, the denser liquid will form a nucleus in the shape of an ellipsoid; and that if the shell be made to revolve with constant angular velocity about *any* given fixed axis, a possible form of the nucleus when the liquids are in relative equilibrium will be an ellipsoid, not coaxial with the external surface.

2. Prove that the velocity of propagation of waves of small displacement of length λ in liquid of density ρ and depth h is

$$\left(\frac{2\pi T}{\lambda} + \frac{g\rho\lambda}{2\pi}\right)^{\frac{1}{2}} / \left(\frac{2\pi\sigma}{\lambda} + \rho \coth \frac{2\pi h}{\lambda}\right)^{\frac{1}{2}},$$

supposing the surface of the liquid covered by a thin flexible membrane of tension T and superficial density σ ; and discuss the case of waves in ice on water of uniform depth.

Supposing the liquid originally still, and plane aerial vibrations of wave-length λ and velocity v in air of density ρ' to impinge on the surface at an angle β ; prove that, when the motion of the system has become periodic, we may represent the displacements of the incident and reflected waves of air and the displacement of the surface by

$$(i) \quad a \sin \{m(x \sin \beta + z \cos \beta) - nt - \alpha\}$$

$$(ii) \quad a \sin \{m(x \sin \beta - z \cos \beta) - nt + \alpha\}$$

$$(iii) \quad b \cos (mx \sin \beta - nt)$$

respectively, where $m = 2\pi/\lambda$, $n = 2\pi v/\lambda$; and then α , the change of phase, is given by

$$\rho' \cot \alpha = \left(\frac{2\pi T}{\lambda v^2} \sin^2 \beta - \frac{2\pi\sigma}{\lambda} + \frac{g\rho}{2\pi v^2}\right) \cos \beta - \rho \cot \beta \coth \left(\frac{2\pi h}{\lambda} \sin \beta\right).$$

3. An approximately circular membrane whose radius in any direction is $a + \delta r$ is vibrating in a type approximating to $w = AJ_n(kr) \cos n\theta$. Shew that the pitch is the same as for a circular membrane of radius

$$a + \int_0^{2\pi} \delta r \cos^2 n\theta \frac{d\theta}{\pi},$$

and that there are two positions of the nodal diameter one of which renders this period a maximum and the other a minimum.

A heterogeneous membrane in the shape of a circular annulus, whose edges are fixed and inner and outer radii are b and c and whose density is μ/r^3 where r is the distance from the centre, is stretched with tension T and is performing small symmetrical normal vibrations. Shew that a possible motion is given by

$$w = A \sin \left(p \log \frac{r}{b} \right) \sin (apt + \alpha),$$

or

$$B \sin \left(p \log \frac{c}{r} \right) \sin (apt + \alpha),$$

where $n\pi = p \log \frac{c}{b}$, n is an integer, and $a^2 = T/\mu$.

4. Investigate the differential equation of the propagation of waves of longitudinal displacement in a uniform cylindrical bar; and prove that these waves take the same time to traverse the length of the bar whatever be the permanent-tension.

Prove that, if an elastic bar of length l with flat ends impinges directly with velocity V on another longer bar, at rest, of length nl of the same material and cross section, also with flat ends, the first bar will be reduced to rest by the impact, and the second bar will appear to move by successive advances of the ends with velocity V for intervals of time $2l/a$, and intervals of rest of $2(n-1)l/a$, a denoting the velocity of propagation of longitudinal vibrations.

UNIVERSITY SCHOLARSHIPS AND CHANCELLOR'S MEDALS.

MONDAY, *January* 19, 1885. 9—12.

ANY one of the following subjects may be chosen for LATIN HEROIC VERSE:

1. *Ἐσπερε, πάντα φέρεις.*
2. Eva Paradiso depulsa lamentatur.
3. Furiis agitatus Orestes.
4. Honor est a Nilo.

The Thesis chosen should be written outside the paper with the author's name, and at the head of his Exercise.

MONDAY, *January* 19, 1885. 9—12.

ANY one of the following subjects may be chosen for an ENGLISH ESSAY:

1. Ἄ δεῖ μαθόντας ποιεῖν, ταῦτα ποιούντες μανθάνομεν.

ARISTOT. *Eth. N.* II. α'.

2. "The greatest happiness of the greatest number" has been often laid down as "the End of Political Government." Consider the value of this definition; and, if you think any other more valuable, propose and defend it.

3. Sketch the life, character, and historic influence of any *one* of the following men:

Luther.
Cardinal Richelieu.
Necker.
Washington.

MONDAY, January 19, 1885. 1—4.

To be translated into ENGLISH PROSE, with brief marginal notes:

- I. Πὰρ δ' ἔθι χάλκειον θῶκον καὶ ἐπαλέα λέσχην
 ὥρῃ χειμερίῃ, ὁπότε κρύος ἀνέρα ἔργων
 ἰσχάνει, ἔνθα κ' ἄοκνος ἀνὴρ μέγα οἶκον ὀφέλλοι,
 μή σε κακοῦ χειμῶνος ἀμηχανίῃ καταμάρψῃ
 σὺν πενίῃ, λεπτῇ δὲ παχὺν πόδα χειρὶ πιέζῃς·
 πολλὰ δ' ἀεργὸς ἀνὴρ, κενεὴν ἐπὶ ἐλπίδα μίμνων,
 χρηίζων βιότοιο, κακὰ προσελέξατο θυμῷ.
 Ἐλπίς δ' οὐκ ἀγαθὴ κεχρημένον ἄνδρα κομίζει,
 ἥμενον ἐν λέσχῃ, τῷ μὴ βίος ἄρκιος εἴη.
 δείκνυε δὲ δμῶεσσι, θέρευσ ἔτι μέσσου ἐόντος·
 Οὐκ αἰεὶ θέρος ἐσσεῖται, ποιείσθε καλιάς.
 Μῆνα δὲ Ληναίων, κάκ' ἤματα, βουδόρα πάντα,
 τοῦτον ἀλεύσθαι, καὶ πηγάδας, αἵτ' ἐπὶ γαῖαν
 πνεύσαντος Βορέας δυσηλεγέες τελέθουσιν,
 ὅστε διὰ Θρήκης ἱπποτρόφου εὐρεῖ πόντῳ
 ἐμπνεύσας ὥρινε· μέμυκε δὲ γαῖα καὶ ὕλη·
 πολλὰς δὲ δρυὺς ὑψικόμους ἐλάτας τε παχείας
 οὔρεος ἐν βήσσης πλανᾷ χθονὶ πουλυβοτείρῃ
 ἐμπίπτων, καὶ πᾶσα βοᾷ τότε νήριτος ὕλη.
 θῆρες δὲ φρίσσουσ', οὐρὰς δ' ὑπὸ μέζ' ἔθεντο,
 τῶν καὶ λάχνη δέρμα κατὰσκιον· ἀλλὰ νῦν καὶ τῶν
 ψυχρὸς ἔων διάησι δασυστέρνων περ ἐόντων·
 καὶ τε διὰ ῥινοῦ βοὸς ἔρχεται οὐδέ μιν ἴσχει,
 καὶ τε δι' αἶγα ἄησι τανύτριχα· πῶσα δ' οὔτι,
 οὔνεκ' ἐπηεταναὶ τρίχες αὐτῶν, οὐ διάησιν
 ἰς ἀνέμου Βορέου· τροχαλὸν δὲ γέροντα τίθησι·
 καὶ διὰ παρθενικῆς ἀπαλόχροος οὐ διάησιν,
 ἥτε δόμων ἔντοσθε φίλῃ παρὰ μητέρι μίμνη,
 οὔπω ἔργ' εἰδυῖα πολυχρύσου Ἀφροδίτης,
 εὔτε λοεσσαμένη τέρενα χροά καὶ λίπ' ἐλαίῳ
 χρισαμένη, μυχίῃ καταλέξεται ἐνδοθι οἴκου,
 ἤματι χειμερίῳ, ὅτ' ἀνόστεος δὴ πόδα τένδει
 ἐν τ' ἀπύρῳ οἴκῳ καὶ ἤθεσι λευγαλείοισιν·
 οὐ γάρ οἱ ἥελιος δείκνυ νομὸν ὀρμηθῆναι,
 ἀλλ' ἐπὶ κυανέων ἀνδρῶν δῆμόν τε πόλιν τε
 στρωφᾶται, βράδιον δὲ Πανελλήνεσσι φαείνει·
 καὶ τότε δὴ κεραοὶ καὶ νήκεροι ὕληκοῖται

λυγρὸν μυλιόωντες ἀνὰ δρία βησσήεντα
 φεύγουσιν· καὶ πᾶσιν ἐνὶ φρεσὶ τοῦτο μέμνηεν,
 οἳ σκέπα μαιύμενοι πυκινούς κευθμῶνας ἔχουσι,
 καὶ γλάφυ πετρῆεν· τότε δὴ τρίποδι βροτῶ ἴσοι,
 οὐτ' ἐπὶ νῶτα ἔαγε, κάρη δ' εἰς οὐδας ὀράται,
 τῷ ἱκελοι φοιτῶσιν, ἀλευόμενοι νίφα λευκὴν.

HEC. *Erg. 492—534.

II. οὔτοι σιωπῶσ' εἴτα μέμφομαί ποτε
 τὴν νῦν σιωπὴν ὡς ἐσιγήθη κακῶς,
 οὐδ' ὡς ἀχρεῖον τὰς γυναῖκας εὖ λέγειν
 δείσας' ἀφήσω τῷ φόβῳ τοῦμὸν καλόν.
 ἔγωγέ σ', ὦ παῖ, πρῶτα μὲν τὰ τῶν θεῶν
 σκοπεῖν κελεύω μὴ σφαλῆς ἀτιμάσας·
 σφάλλει γὰρ ἐν τούτῳ μόνος, τᾶλλ' εὖ φρονῶν.
 πρὸς τοῖσδε δ', εἰ μὲν μὴ ἴδικουμένοις ἐχρῆν
 τολμηρὸν εἶναι, κάρτ' ἂν εἶχον ἡσύχως·
 νυνὶ δὲ σοί τε τοῦτο τὴν τιμὴν φέρει,
 καμοὶ παραινεῖν οὐ φόβον φέρει, τέκνον,
 ἄνδρας βιαίους καὶ κατείργοντας νεκρούς
 τάφου τε μοίρας καὶ κτερισμάτων λαχεῖν,
 ἐς τήνδ' ἀνάγκην σῇ καταστῆσαι χερί,
 νόμιμά τε πάσης συγχέοντας Ἑλλάδος
 παῦσαι· τὸ γὰρ τοι συνέχον ἀνθρώπων πόλεις
 τοῦτ' ἔσθ', ὅταν τις τοὺς νόμους σώζῃ καλῶς.
 ἐρεῖ δὲ δὴ τις ὡς ἀνανδρία χερῶν,
 πόλει παρόν σοι στέφανον εὐκλείας λαβεῖν,
 δείσας ἀπέστης, καὶ συὸς μὲν ἀγρίου
 ἀγῶνος ἤψω, φαῦλον ἀθλήσας πόνον,
 οὐδ' ἐς κράνος βλέψαντα καὶ λόγχης ἀκμὴν
 χρῆν ἐκπονῆσαι, δειλὸς ὢν ἐφευρέθης.
 μὴ δῆτ' ἐμός γ' ὢν, ὦ τέκνον, δράσης τάδε.
 ὀρᾷς, ἄβουλος ὡς κεκερτομημένη
 τοῖς κερτομοῦσι γοργὸν ὡς ἀναβλέπει
 σὴ πατρίς; ἐν γὰρ τοῖς πόνοισιν αὖξεται.
 αἱ δ' ἡσυχοὶ σκοτεινὰ πράσσουσιν πόλεις
 σκοτεινὰ καὶ βλέπουσιν εὐλαβούμεναι.
 οὐκ εἰ νεκροῖσι καὶ γυναιξὶν ἀθλίαις
 προσωφελήσων, ὦ τέκνον, κεχρημέναις;
 ὡς οὔτε ταρβῶ σὺν δίκῃ σ' ὀρμώμενον,
 Κάδμου θ' ὀρᾶσα λαὸν εὖ πεπραγότα,
 ἔτ' αὐτὸν ἄλλα βλήματ' ἐν κύβοις βαλεῖν
 πέποιθ'. ὁ γὰρ θεὸς πάντ' ἀναστρέφει πάλιν.

EURIP. *Iκέτ. 297—331.

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III. μὰ Δί', ἀλλ' ἀπόφηνον ὅλην σαυτὴν
 γενναιοπρεπῶς τοῖσιν ἐρασταῖς
 ἡμῖν, οἳ σου τρυχόμεθ' ἤδη
 τρία καὶ δέκ' ἔτη.
 λῦσον δὲ μάχας καὶ κορκορυγὰς,
 ἵνα Λυσιμάχην σε καλῶμεν
 παῦσον δ' ἡμῶν τὰς ὑπονοίας
 τὰς περικόμψους,
 αἷς στωμυλλόμεθ' εἰς ἀλλήλους·
 μῖζον δ' ἡμᾶς τοὺς Ἑλληνας
 πάλιν ἐξ ἀρχῆς
 φιλίας χυλῶ, καὶ συγγνώμῃ
 τινὶ προτέρᾳ κέρασον τὸν νοῦν·
 καὶ τὴν ἀγορὰν ἡμῖν ἀγαθῶν
 ἐμπλησθῆναι, μεγάλων σκορόδων,
 σικύων πρῶων, μῆλων, ροιῶν,
 δούλοισι χλανισκιδίων μικρῶν·
 καὶ Βοιωτῶν γε φέροντας ἰδεῖν
 χῆνας, νήττας, φάττας, τροχίλους·
 καὶ Κωπιδῶν ἐλθεῖν σπυρίδας,
 καὶ περὶ ταύτας ἡμᾶς ἀθρόους
 ὀψωνοῦντας τυρβάζεσθαι
 Μορύχῳ, Τελέᾳ, Γλαυκέτῃ, ἄλλοις
 τένθαις πολλοῖς· κῆτα Μελάνθιον
 ἤκειν ὕστερον εἰς τὴν ἀγοράν,
 τὰς δὲ πεπρᾶσθαι, τὸν δ' ὀτοτύζειν,
 εἶτα μονοφθεῖν ἐκ Μηδείας,
 ὀλόμαν ὀλόμαν, ἀποχρηθθεῖς
 τὰς ἐν τεύτλοισι λοχευομένας·
 τοὺς δ' ἀνθρώπους ἐπιχαίρειν.
 ταῦτ', ὦ πολυτίμητ', εὐχομένοις ἡμῖν δίδου.

ARISTOPH. *Εἰρήνη*, 987—1016.

IV. Αἰγύπτου μεδέουσα μελαμβώλου, λινόπεπλε
 δαῖμον, ἐπ' εὐϊέρους βῆθι θυηπολίας.
 σοὶ γὰρ ὑπὲρ σχιδάκων λαγαρὸν ποπάνευμα πρόκειται,
 καὶ πολὺν χηνῶν ζεύγος ἐνδροβίων,
 καὶ νάρδος ψαφαρὴ κεγχρίτισιν ἰσχάσιν ἀμφί,
 καὶ σταφυλὴ γραίῃ, χῶ μελίπνους λίβανος.
 εἰ δ' ὥς ἐκ πελάγους ἐρρύσας Δᾶμιν, ἄνασσα,
 κῆκ πενίης, θύσει χρυσόκερων κεμάδα.

PHILIPPUS, *Anthol.*, I. 32.

TUESDAY, *January 20*, 1885. 9—12.

GREEK VERSE.

1. FOR IAMBICS:

At length upon the lone Chorasmian shore
 He paused, a wide and melancholy waste
 Of putrid marshes. A strong impulse urged
 His steps to the sea-shore. A swan was there,
 Beside a sluggish stream among the reeds.
 It rose as he approached, and with strong wings
 Scaling the upward sky, bent its bright course
 High over the immeasurable main.
 His eyes pursued its flight.—“Thou hast a home,
 Beautiful bird; thou voyagest to thine home,
 Where thy sweet mate will twine her downy neck
 With thine, and welcome thy return with eyes
 Bright in the lustre of their own fond joy.
 And what am I that I should linger here,
 With voice far sweeter than thy dying notes,
 Spirit more vast than thine, frame more attuned
 To beauty, wasting these surpassing powers
 In the deaf air, to the blind earth, and heaven
 That echoes not my thoughts?”

SHELLEY, *Alastor*, 272.

2. For ANACREONTICS:

Gather ye rose-buds while ye may:
 Old Time is still a-flying;
 And this same flower that smiles to-day,
 To-morrow will be dying.

HERRICK.

TUESDAY, *January 20*, 1885. 1—4.

LATIN PROSE TRANSLATION.

TRANSLATE into ENGLISH PROSE, with short marginal notes when required:

1. Sed quid ego disputo quae mihi tum, si Gaditani contra me dicerent, vere posse dici viderentur? Illis enim repetentibus L. Cornelium responderem legem populum Romanum iussisse de civitate tribuenda; huic generi legum fundos populos fieri non solere; Cn. Pompeium de consili sententia civitatem huic dedisse, nullum populi nostri iussum Gaditanos habere, itaque nihil esse sacrosanctum, quod lege exceptum videretur; si esset, tamen in foedere nihil esse cautum praeter pacem; additum esse etiam illud, ut maiestatem illi nostram conservare deberent, quae certe minueretur, si aut adiutoribus illorum civibus uti in bellis nobis non liceret aut praemi tribuendi potestatem nullam haberemus. Nunc vero quid ego contra Gaditanos loquar, cum id quod defendo, voluntate eorum, auctoritate, legatione ipsa comprobetur? Qui a principio sui generis ac rei publicae, id est, ab omni studio

sensuque Poenorum, mentis suas ad nostrum imperium nomenque flexerunt: qui, cum maxima bella nobis inferrentur, eos moenibus excluserunt, classibus insecuti sunt, corporibus opibus copiis depulerunt; qui et veterem illam speciem foederis Marciani semper omni sanctiorem arce duxerunt et hoc foedere Catuli senatusque auctoritate se nobiscum coniunctissimos esse arbitrati sunt; quorum moenia delubra agros ut Hercules ipse itinerum ac laborum suorum, sic maiores nostri imperi ac nominis populi Romani terminos esse voluerunt.

CICERO, *pro Balbo*, XVII. § 38, 39.

2. Definitio est oratio, quae id, quod definitur, explicat quid sit. Definitionum autem duo genera prima: unum earum rerum, quae sunt; alterum earum, quae intelliguntur. Esse ea dico, quae cerni tangere possunt, ut fundum aedes parietem stillicidium, mancipium pecudem, supellectilem penus, cetera; quo ex genere quaedam interdum nobis definienda sunt. Non esse rursus ea dico, quae tangi demonstrare non possunt, cerni tamen animo atque intelligi possunt, ut si usucapionem, si tutelam, si gentem, si agnationem definias, quarum rerum nullum subest quasi corpus, est tamen quaedam conformatio insignita et impressa in intelligentia, quam notionem voco. Ea saepe in argumentando definitione explicanda est. Atque etiam definitiones aliae sunt partitionum, aliae divisionum: partitionum, quum res ea, quae proposita est, quasi in membra discernitur; ut si quis ius civile dicat id esse, quod in legibus, senatus consultis, rebus iudicatis, iuris peritorum auctoritate, edictis magistratum, more, aequitate consistat. Divisionum autem definitio formas omnes complectitur, quae sub eo genere sunt, quod definitur, hoc modo: Abalienatio est eius rei, quae mancipi est, aut traditio alteri nexu aut in iure cessio, inter quos ea iure civili fieri possunt.

CICERO, *Topica*, § 26.

3. Ubi turris altitudo perducta est ad contabulationem, eam in parietes instruxerunt ita, ut capita tignorum extrema parietum structura tegerentur, ne quid emineret, ubi ignis hostium adhaeresceret. Hanc super contignationem, quantum tectum plutei ac vinearum passum est, laterculo adstruxerunt supraque eum locum duo tigna transversa iniecerunt non longe ab extremis parietibus, quibus suspenderent eam contignationem, quae turri tegimento esset futura, supraque ea tigna directo transversas trabes iniecerunt easque axibus religaverunt (has paulo longiores atque eminentiores, quam extremi parietes erant, effecerunt, ut esset ubi tegimenta praependere possent ad defendendos ictus ac repellendos, cum inter eam contignationem parietes extruerentur) eamque contabulationem summam lateribus lutoque constraverunt, ne quid ignis hostium nocere posset, centonesque insuper iniecerunt, ne aut tela tormentis immissa tabulationem perfringerent aut saxa ex catapultis latericium discuterent. Storias autem ex funibus ancorariis tres in longitudinem parietum turris latas quattuor pedes fecerunt easque ex tribus partibus, quae ad hostes vergebant, eminentibus trabibus circum turrim praependentes religaverunt; quod unum genus tegimenti aliis locis erant experti nullo telo neque tormento traici posse. Ubi vero ea pars turris, quae erat perfecta, tecta atque munita est ab omni ictu hostium, pluteos ad alia opera abduxerunt; turris tectum per se ipsum pressionibus ex contignatione prima suspendere ac tollere coeperunt; ubi, quantum storiarum demissio patiebatur, tantum elevarant. Intra haec tegimenta abditi atque muniti parietes lateribus extruebant rursusque alia pressione ad aedificandum sibi locum expediebant.

CAESAR, *Bell. Civil.* II. 9.

4. Adsumo te in consilium rei familiaris, ut soleo. Praedia agris meis vicina atque etiam inserta venalia sunt. In his me multa sollicitant, aliqua nec minora deterrent. Sollicitat primum ipsa pulchritudo iungendi, deinde quod non minus utile quam voluptuosum posse utraque eadem opera, eodem viatico invisere, sub eodem procuratore ac paene isdem actoribus habere, unam villam colere et ornare, alteram tantum tueri. Iam, quod deliberationis nostrae caput est, agri sunt fertiles pingues aquosi, constant campis vineis silvis, quae materiam et ex ea redditum sicut modicum ita statum praestant. Sed haec felicitas terrae inbecillis cultoribus fatigatur. Nam possessor prior saepius vendidit pignora, et dum reliqua colonorum minuit ad tempus, vires in posterum exhaust, quarum defectione rursus reliqua creverunt. Sunt ergo instruendi eo pluris quod frugi mancipiis: nam nec ipse usquam victos habeo nec ibi quisquam. Superest ut scias quanti videantur posse emi; sestertio tricies, non quia non aliquando quinquagies fuerint, verum et hac paenuria colonorum et communi temporis iniquitate ut redditus agrorum sic etiam pretium retro abiit. Quaeris an hoc ipsum tricies facile colligere possimus? Sum quidem prope totus in praediis, aliquid tamen fenero, nec molestum erit mutuari; accipiam a socru, cuius arca non secus ac mea utor. Proinde hoc te non moveat, si cetera non refragantur, quae velim quam diligentissime examines. Nam cum in omnibus rebus tum in disponendis facultatibus plurimum tibi et usus et providentiae superest. Vale.

PLINY, *Epist.* III. 19.

WEDNESDAY, Jan. 21, 1885. 9 to 12.

WRITE a LATIN ESSAY on *one* of the following subjects:

1. Quaeritur quid de philosophia meriti sint Anaxagoras, Empedocles, Democritus, *Atomici* quos vocant philosophi.

2. Res ludicra apud Graecos, Romanos, nostrates.

3. Cicero et Petrarca apud inferos de studiis Latinis Italisque disserunt.

4. Quid tristes querimoniae,
si non supplicio culpa reciditur,
quid leges, sine moribus
vanae, proficiunt?

WEDNESDAY, Jan. 21, 1885. 1—4 P.M.

TRANSLATE into English, adding short notes where necessary:

I. οἱ γὰρ Εὐβοέες παραχρησάμενοι τὸν Βάκιδος χρησμὸν ὡς οὐδὲν λέγοντα, οὔτε τι ἐξεκομίσαντο οὐδὲν οὔτε προεσάξαντο ὡς παρεσόμενου σφί πολέμου, περιπετέα τε ἐποίησαντο σφίσι αὐτοῖσι τὰ πρήγματα. Βάκιδι γὰρ ὦδε ἔχει περὶ τούτων ὁ χρησμός·

φράζω, βαρβαρόφωνος ὅταν ζυγὸν εἰς ἄλλα βάλλῃ.

βύβλινον, Εὐβοίης ἀπέχειν πολυμηκάδας αἰγας.

τούτοις δὲ οὐδὲν τοῖσι ἔπειτα χρησαμένοις ἐν τοῖσι τότε παροῦσί τε καὶ προσδοκίμοις κακοῖσι παρὴν σφί συμφορῇ χρᾶσθαι πρὸς τὰ μέγιστα.

HERODOTUS, VIII 20.

II. ἀνδρὶ δὲ τυράνῳ ἢ πόλει ἀρχὴν ἐχούσῃ οὐδὲν ἄλογον ὃ τι ξυμφέρον οὐδ' οἰκείον ὃ τι μὴ πιστόν· πρὸς ἕκαστα δὲ δεῖ ἢ ἐχθρὸν ἢ φίλον μετὰ καιροῦ γίγνεσθαι. καὶ ἡμᾶς τοῦτο ὠφελεῖ ἐνθάδε, οὐκ ἦν τοὺς φίλους κακώσωμεν, ἀλλ' ἦν οἱ ἐχθροὶ διὰ τὴν τῶν φίλων ῥώμην ἀδύνατοι ὦσιν. ἀπιστεῖν δὲ οὐ χρή· καὶ γὰρ τοῖς ἐκεῖ ξυμμάχοις ὡς ἕκαστοι χρήσιμοι ἐξηγούμεθα, Χίους μὲν καὶ Μηθυμναίους νεῶν παροχῇ αὐτονόμους, τοὺς δὲ πολλοὺς χρημάτων βιαιότερον φορᾶ, ἄλλους δὲ καὶ πάνυ ἐλευθέρως ξυμμαχοῦντας, καίπερ νησιώτας ὄντας καὶ εὐλήπτους, διότι ἐν χωρίοις ἐπικαίροις εἰσὶ περὶ τὴν Πελοπόννησον. ὥστε καὶ τὰνθάδε εἰκὸς πρὸς τὸ λυσιτελοῦν καί, ὃ λέγομεν, ἐς Συρακοσίους δεὸς καθίστασθαι. ἀρχῆς γὰρ ἐφίενται ὑμῶν καὶ βούλονται ἐπὶ τῷ ἡμετέρῳ ξυστήσαντες ὑμᾶς ὑπόπτῳ βίᾳ ἢ κατ' ἐρημίαν, ἀπράκτων ἡμῶν ἀπελθόντων, αὐτοὶ ἄρξαι τῆς Σικελίας. ἀνάγκη δέ, ἢν ξυστήτε πρὸς αὐτούς· οὔτε γὰρ ἡμῖν ἔτι ἔσται ἰσχὺς τοσαύτη ἐς ἐν ξυστάσῃ εὐμεταχείριστος, οὔθ' οἷδ' ἀσθενεῖς αὐτῶν μὴ παρόντων πρὸς ὑμᾶς εἶεν.

THUCYDIDES, VI 85.

III. οὐ μὲν Νικήρατός γε οὕτως ὁ τοῦ Νικίου ἀγαπητὸς παῖς, ὁ παντάπασιν ἀσθενὴς τῷ σώματι· οὐδ' Εὐκτῆμων ὁ τοῦ Αἰσίωνος, οὐχ οὕτως· οὐδ' Εὐθύδημος ὁ τοῦ Στρατοκλέους· ἀλλ' αὐτῶν ἕκαστος ἐκὼν ἐπιδούς τριήρη οὐκ ἀπέδρα ταύτῃ τὴν στρατείαν, ἀλλὰ τὴν μὲν ἐπίδοσιν ἐν χάριτος μέρει καὶ δωρεᾷς παρείχον πλέουσιν τῇ πόλει, οὗ δ' ὁ νόμος προσέταττεν, ἐνταῦθα τοῖς σώμασιν αὐτοὶ λειτουργεῖν ἠξίου. ἀλλ' οὐχ ὁ ἱππαρχος Μειδίας, ἀλλὰ τὴν ἐκ τῶν νόμων τάξιν λιπῶν, οὗ δίκην ὀφείλει τῇ πόλει δοῦναι, τοῦτ' ἐν εὐεργεσίας ἀριθμήσει μέρει. καίτοι τὴν τοιαύτην τριηραρχίαν, ὥ πρὸς θεῶν, πότερον τελωνίαν καὶ πεντηκοστήν καὶ λιποταξίαν καὶ στρατείας ἀπόδρασιν καὶ πάντα τὰ τοιαῦτα ἀρμόττει καλεῖν, ἢ φιλοτιμίαν; οὐδένα γὰρ τρόπον ἄλλον ἐν τοῖς ἱππεύσιν αὐτὸν ἀτελῇ ποιῆσαι στρατείας δυνάμενος ταύτην εὗρηκε Μειδίας· καινὴν ἱππικὴς τινὰ πεντακοστήν.

DEMOSTHENES *or. in Midiam* §§ 165, 166 pp. 567—8.

IV. ΞΕ. Εἴ τις ἀνέροιτο ἡμᾶς τὴν περὶ γράμματα συνουσίαν τῶν μανθανόντων, ὁπόταν τις ὁτιοῦν ὄνομα ἐρωτηθῇ τίνων ἐστὶ γραμμάτων, πότερον αὐτῷ τότε φῶμεν γίγνεσθαι τὴν ζήτησιν ἐνὸς ἕνεκα μᾶλλον τοῦ προβληθέντος ἢ τοῦ περὶ πάντα τὰ προβαλλόμενα γραμματικωτέρῳ γίγνεσθαι; ΝΕ. ΣΩ. Δῆλον ὅτι τοῦ περὶ ἅπαντα. ΞΕ. Τί δ' αὖ; νῦν ἡμῖν ἡ περὶ τοῦ πολιτικοῦ ζήτησις ἕνεκα αὐτοῦ τούτου προβέβληται μᾶλλον ἢ τοῦ περὶ πάντα διαλεκτικωτέροις γίγνεσθαι; ΝΕ. ΣΩ. Καὶ τοῦτο δῆλον ὅτι τοῦ περὶ πάντα. ΞΕ. Ἡ που τὸν τῆς ὑφαντικῆς γε λόγον αὐτῆς ταύτης ἕνεκα θηρεύειν οὐδεὶς ἂν ἐβελήσειε νοῦν ἔχων· ἀλλ', οἶμαι, τοὺς πλείστους λέληθεν, ὅτι τοῖς μὲν τῶν ὄντων ῥαδίως καταμαθεῖν αἰσθηταί τινες ὁμοιότητες πεφύκασιν, ἃς οὐδὲν χαλεπὸν δηλοῦν, ὅταν αὐτῶν τις βουληθῇ τῷ λόγον αἰτοῦντι περὶ τοῦ μὴ μετὰ πραγμάτων ἀλλὰ χωρὶς λόγου ῥαδίως ἐνδείξασθαι· τοῖς δ' αὖ μεγίστοις οὖσι καὶ τιμιωτάτοις οὐκ ἔστιν εἶδωλον οὐδὲν πρὸς τοὺς ἀνθρώπους εἰργασμένον ἐναργῶς, οὐ δειχθέντος τὴν τοῦ πυνθανομένου ψυχὴν ὁ βουλόμενος ἀποπληρῶσαι, πρὸς τῶν αἰσθήσεων τινα προσαρμοτῶν, ἱκανῶς πληρώσει. διὸ δεῖ μελετᾶν λόγον ἐκάστου δυνατόν εἶναι δοῦναι καὶ δέξασθαι· τὰ γὰρ ἀσώματα, κἄλλιστα ὄντα καὶ μέγιστα, λόγῳ μόνον, ἄλλῳ δὲ οὐδενὶ σαφῶς δείκνυνται, τούτων δὲ ἕνεκα πάντ' ἐστὶ τὰ νῦν λεγόμενα. ῥᾶν δ' ἐν τοῖς ἐλάττωσιν ἡ μελέτη παντὸς πέρι μᾶλλον ἢ περὶ τὰ μείζω.

PLATO, *Politicus* 285 c—286 a.

V. μὴ τοίνυν ὥς διὰ βακτηρίας τοῦ πέριξ ἀέρος ὁρᾶν ἡμᾶς οἱ Στωϊκοὶ λεγέτωσαν. ἡ γὰρ τοιαύτη διάγνωσις ἀντιβαινόντων ἐστὶ σωμάτων, κατὰ συλλογισμὸν ἔτι μᾶλλον, οὐ πιλητοῦ δὲ αἰσθητικῆ ἢ τοῦ ὁμματος αἰσθησις ἡμῖν ἐστὶν οὐδὲ τῆς σκληρότητος ἢ μαλακότητος, ἀλλὰ χροᾶς καὶ μεγέθους καὶ θέσεως, ὧν οὐδὲν ἡ βακτηρία διαγνώσκει δύναται. πολὺ τοίνυν ἄμεινον, ὥς ἐν ἐσφαλμένοις, Ἐπίκουρος ἀπεφάνητο τῶν Στωϊκῶν. ἐκείνοι μὲν γὰρ τῶν ὁρατῶν οὐδὲν ἄγουσιν ἄχρι τῆς ὀπτικῆς δυνάμεως. ὁ δὲ Ἐπίκουρος ἄγει καὶ πολὺ γε τούτου κρεῖττον Ἀριστοτέλης, οὐκ εἶδωλον σωματικόν, ἀλλὰ ποιότητα διὰ ἀλλοιώσεως τοῦ πέριξ ἀέρος ἀπὸ τῶν ὁρατῶν ἄγων ἄχρι τῆς ὀψεως. εὐλαβήθη γὰρ ὅλως αἰσθητικὸν ποιῆσαι τὸν πέριξ ἀέρα, καίτοι τὴν γε σάρκα σαφῶς ὁρᾶν αἰσθητικὴν γινομένην ἐκ τῆς ἀφικνουμένης εἰς αὐτὴν ἀπὸ τῆς ἀρχῆς δυνάμεως. τί δὲ χαλεπὸν ἐστὶ τὴν ἡλιακὴν αὐγὴν αἰσθητικὴν ὑποθέσθαι, οἷον μάλιστα τὸ κατὰ τοὺς ὀφθαλμοὺς πνεῦμα τὸ παραγινόμενον ἐξ ἐγκεφάλου προδήλως ὁράται; καὶ γὰρ φωτοειδὲς ἐστίν. εἰ δὲ καὶ περὶ ψυχῆς οὐσίας ἀποφάνασθαι χρή, δυοῖν θάτερον ἀναγκαῖον εἰπεῖν, ἢ τοῦτο εἶναι τὸ οἷον αὐγοειδὲς τε καὶ αἰθερωδὲς σῶμα εἰς ὃ, κἂν μὴ βούλωνται, κατὰ ἀκολουθίαν ἀφικνοῦνται Στωϊκοί τε καὶ Ἀριστοτέλης, ἡ αὐτὴν μὲν ἀσώματον ὑπάρχειν οὐσίαν, ὄχημα δὲ τὸ πρῶτον αὐτῆς εἶναι τουτὶ τὸ σῶμα, διὰ οὗ μέσου τὴν πρὸς τὰλλα σώματα κοινωνίαν λαμβάνει. τοῦτο μὲν οὖν αὐτὸ διὰ ὅλου λεκτέον ἡμῖν ἐκτετάσθαι τοῦ ἐγκεφάλου, τῇ δὲ γε πρὸς αὐτὸ κοινωνίᾳ κατὰ τὰς ὀφεις πνεῦμα φωτοειδὲς γίνεσθαι.

CL. GALENUS, *de Hippocr. et Platone* K. V pp. 642—644.

THURSDAY, 22 Jan. 1885. 9 A.M.—12.

For LATIN PROSE:

A defence of Seneca and Plutarke.

THE familiarity I have with these two men, and the ayde they affoord me in my olde age, and my Booke meerey framed of their spoiles, bindeth me to wed and maintaine their honour. As for *Seneca*, amongst a thousand petty-Pamphlets, those of the pretended reformed religion have published for the defence of their cause, which now and then proceede from a good hand, and which, pittie it is, it should not be employed in more serious and better subjects: I have heeretofore seene one, who to prolong and fill up the similitude, he would finde betweene the governement of our unfortunate late king *Charles* the ninth and that of *Nero*, compareth the whilom lord Cardinall of *Lorene* unto *Seneca*; their fortunes to have beene both chiefe men in the governement of their Princes, and therewithall their manners, their conditions and their demeanours; wherein (in mine opinion) hee doth the saide lorde Cardinall great honour: for, although I bee one of those that highly respect his spirite, his woorth, his eloquence, his zeale toward his religion and the service of his King; and his good fortune to have beene borne in an age, wherein hee was so new, so rare, and therewithall so necessarie for the common-wealth, to have a Cleargie-man of such dignitie and nobilitie, sufficient and capable of so weightie a charge: yet to confesse the truth I esteeme not his capacitie such, nor his vertue so exquisitely unspotted, nor so entire or constant, as that of *Seneca*. Now this Booke whereof I speake, to come to his intention, maketh a most injurious description of *Seneca*, having borrowed his reproaches from *Dion* the Historian, to whose testimony I give no credite at all: For besides, he is inconstant, as one who after hee hath called *Seneca* exceeding wise, and shortly after termed him a mortall enemy to *Neroes* vices, in other places makes him covetous, given to usurie, ambitious, base-minded, voluptuous and under false pretences, and fained shewes, a counterfet Philosopher; his vertue appeareth so livelic, and wisdom so vigorous in his writings; and the defence of these imputations is so manifest, as well of his riches, as of his excessive expences, that I beleeve no witness to the contrarie. Moreover, there is great reason wee should rather give credite to Romane Historians in such things, then to Græcians and strangers, wheras *Tacitus* and others speake very honourably of his life and death, and in all other circumstance declare him to have beene a most excellent and rarely-vertuous man. I will alleadge noe other reproch against *Dions* judgement, then this, which is unavoydable; that is, his understanding of the Roman affaires, is so weake and ill advised, as he dareth defend and maintaine *Iulius Cæsars* cause against *Pompey*, and blusheth not to justifie *Antonius* against *Cicero*.

MONTAIGNE, *Essayes done into English by Iohn Florio*

(Lond. 1613) bk. II. c. 32 p. 404.

THURSDAY, January 22, 1885. 1—4.

TRANSLATE, with short marginal notes where necessary :

- (1) exite, agite exite, ignaui, male habiti et male conciliati,
 quorum numquam quicquam quoiquam uenit in mentem ut recte faciant,
 quibus, nisi ad hoc exemplum experior, non potest ussura usurpari.
 neque homines magis asinos umquam uidi: ita plagis costae callent;
 quos quom ferias, tibi plus noceas. eo enim ingenio hi sunt flagritribae,
 qui haec habent consilia: ubi data occassio, rape clepe tene,
 harpaga bibe es fuge.
 hoc eorum opus, ut mauelis lupos apud ouis linquere
 quam hos domi custodes.
 at faciem quom aspicias eorum, hau mali uidentur: opera fallunt.
 nunc adeo hanc edictionem nisi animum aduertetis omnes,
 nisi somnum socordiamque ex pectore oculisque amouetis,
 ita ego uostra latera loris faciam ualide uaria uti sint,
 ut ne peristromata quidem aequae picta sint Campanica
 neque Alexandrina beluata conchuliata tapetia.

PLAUTUS, *Pseudolus* 133—147.

- (2) multaque praeterea languentia membra per artus
 soluunt atque animam labefactant sedibus intus.
 denique si calidis etiam cunctare lauabris
 plenior et laueris, solio feruentis aquae
 quam facile in medio fit uti des saepe ruinas!
 carbonumque granis uis atque odor insinuat
 quam facile in cerebrum, nisi aquam praecepimus ante!
 at cum membra domus percepit feruidior uis,
 tum fit odor uiri plagae mactabilis instar.
 nonne uides etiam terra quoque sulphur in ipsa
 gignier et taetro concreescere odore bitumen;
 denique ubi argenti uenas aurique secuntur,
 terrae penitus scrutantes abdita ferro,
 qualis expiret Scaptensula subter odores?

LUCRETIVS, VI. 797—810.

- (3) quae sit hiems Veliae, quod caelum, Vala, Salerni,
 quorum hominum regio et qualis uia (nam mihi Baias
 Musa superuacuas Antonius, et tamen illis
 me facit inuisum, gelida cum perluor unda
 per medium frigus. sane murteta relinqui,
 dictaque cessantem neruis elidere morbum
 sulfura contemni, uicus gemit, inuidus aegris,
 qui caput et stomachum supponere fontibus audent
 Clusinis, Gabiosque petunt et frigida rura
 mutandus locus est et deuersoria nota
 praeteragendus equus. 'quo tendis? non mihi Cumas
 est iter aut Baias' laeua stomachosus habena
 dicet equus; sed equis frenatost auris in ore);

maior utrum populum frumenti copia pascat,
 collectosne bibant imbres puteosne perennes
 iugis aquae nam uina nihil moror illius orae.....
 tractus uter plures lepores, uter educet apros;
 ultra magis pisces et echinos aequora celent,
 pinguis ut inde domum possim Phaeaxque reuerti,
 scribere te nobis, tibi nos adcredere par est.

HORACE, *Ep.* I. XV. 1—16, 22—25.

- (4) ipse petit trepidam tutus sine milite Romam,
 iam doctam seruire togae: populoque precanti
 scilicet indulgens, summum dictator honorem
 contigit, et laetos fecit se consule fastos.
 namque omnes voces, per quas iam tempore tanto
 mentimur dominis, haec primum reperit aetas,
 qua sibi ne ferri ius ullum Caesar abesset,
 Ausonias uoluit gladiis miscere secures.
 addidit et fasces aquilis, et nomen inane
 imperii rapiens, signauit tempora digna
 maesta nota. nam quo melius Pharsalicus annus
 consule notus erit? fingit solemnia Campus,
 et non admissae dirimit suffragia plebis,
 decantatque tribus, et uana uersat in urna.
 nec caelum seruare licet: tonat angure surdo,
 et laetae iurantur aues, bubone sinistro.
 inde perit primum quondam ueneranda potestas
 iuris inops: careat tantum ne nomine tempus,
 menstruus in fastos distinguit saecula consul.
 nec non Iliacae numen quod praesidet Albae,
 haud meritum Latio sollemnia sacra subacto,
 uidit flammifera confectas nocte Latinas.

LUCAN, V. 381—402.

- (5) quid primum mediumue canam, quo fine quiescam?
 auratasne trabes an Mauros undique postis
 an picturata lucentia marmora uena
 mirer an emissas per cuncta cubilia lymphas?
 huc oculis, huc mente trahor. uenerabile dicam
 lucorum senium? te, quae uada fluminis infra
 cernis, an ad siluas quae respicis, aula, tacentis?.....
 uidi artes ueterumque manus uariisque metalla
 uiua modis. labor est auri memorare figuras,
 aut ebur aut dignas digitis contingere gemmas,
 quicquid et argento primum, uel in aere minori
 lusit et enormes manus est experta colossos.
 dum uagor aspectu uisusque per omnia duco,
 calcabam necopinus opes. nam splendor ab alto
 defluus et nitidum referentes aera testae
 monstrauere solum; uarias ubi picta per artes
 gaudet humus superatque nouis asarota figuris.

STATIUS, *Silvae* I. III. 34—40, 47—56.

FRIDAY, January 23, 1885. 9—12.

For LATIN HEXAMETERS :

That darkesome cave they enter, where they find
That cursed man, low sitting on the ground,
Musing full sadly in his sullein mind;
His griesly lockes, long growen, and unbound,
Disordred hong about his shoulders round,
And hid his face ; through which his hollow eyne
Lookt deadly dull, and stared as astound ;
His raw-bone cheekes through penurie and pine,
Were shronke into his jawes, as he did never dine.

His garment nought but many ragged clouts,
With thornes together pind and patched was,
The which his naked sides he wrapt abouts ;
And him beside there lay upon the gras
A drearie corse, whose life away did pas,
All wallowed in his owne yet luke-warne blood,
That from his wound yet welled fresh, alas ;
In which a rustie knife fast fixed stood,
And made an open passage for the gushing flood.

SPENSER, *Faerie Queene*, Bk. I. Cant. ix

For LATIN LYRICS :

Winter, now thy spite is spent,
Frost and ice and branches bent !
Fogs and furious storms are o'er,
Sloth and torpor, sorrow froze,
Pallid wrath, lean discontent.

Comes the graceful band of May !
Cloudless shines the limpid day,
Shine by night the Pleiades ;
While a grateful summer breeze
Makes the season soft and gay.

Golden Love ! shine forth to view !
Souls of stubborn men subdue !
See me bend ! what is thy mind ?
Make the girl thou givest kind,
And a leaping ram's thy due !

J. A. SYMONDS.

FRIDAY, *January 23, 1885.* 1—4.

TRANSLATE into GREEK PROSE:

I. Gasca accepted the important mission now tendered to him without hesitation; and, repairing to Madrid, received the instructions of the government as to the course to be pursued. They were expressed in the most benign and conciliatory tone, perfectly in accordance with the suggestions of his own benevolent temper. But, while he commended the tone of the instructions, he considered the powers with which he was to be intrusted as wholly incompetent to their object. They were conceived in the jealous spirit with which the Spanish Government usually limited the authority of its great colonial officers, whose distance from home gave peculiar cause for distrust. On every strange and unexpected emergency, Gasca saw that he should be obliged to send back for instructions. This must cause delay, when promptitude was essential to success. The Court, moreover, as he represented to the council, was, from its remoteness from the scene of action, utterly incompetent to pronounce as to the expediency of the measures to be pursued. Some one should be sent out, in whom the king could implicitly confide, and who should be invested with powers competent to every emergency; and he boldly demanded that he should go not only as the representative of the sovereign, but clothed with all the authority of the sovereign himself.

PRESCOTT.

II. Now by actual knowledge I understand an active sagacity in the soul, or quick recollection, as it were, whereby some small business being hinted unto her, she runs out presently into a more clear and larger conception. And I cannot better describe her condition than thus: suppose a skilfull musician fallen asleep in the field upon the grasse, during which time he shall not so much as dream any thing concerning his musical faculty, so that in one sense there is no actual skill or notion, nor representation of any thing musical in him; but his friend, sitting by him, that cannot sing at all himself, jogs him and awakes him, and desires him to sing this or the other song, telling him two or three words of the beginning of the song, whereupon he presently takes it out of his mouth, and sings the whole song upon so slight and slender intimation; so the mind of man being jogged and awakened by the impulses of outward objects, is stirred up into a more full and clear conception of what was but imperfectly hinted to her from externall occasions: and this faculty I venture to call actual knowledge, in such a sense as the sleeping musician's skill might be called actual skill, when he thought nothing of it.

DR HENRY MORE

SATURDAY, Jan. 24, 1885. 9 to 10.30.

GREEK GENERAL PAPER (A).

1. DATE and describe briefly the events of the last day in the life of Epaminondas. What historical importance may be ascribed to his career, and to that of Agesilaus?

2. Sketch briefly, with dates, the revolutions which the Macedonian kingdom underwent from the death of Alexander the Great to the accession of the last Philip.

3. Give the force of the preposition in, καταζευγοτροφέω, ἀπανθέω, ἀποκαλέω, ἀποβλέπω, ἀπείπον, ὑπείπον. Supply a present and other tenses to the last two verbs in Attic Prose.

4. Comment on grammatical questions arising out of:

(a) πρέσβεις ἄγουσα, οἵπερ φράσωσι. THUC. VII. 25.

(b) οὐδείς ὅστις οὐχ ἡγείτο δίκην με λήψεσθαι, ἐπειδὴν τάχιστα δοκιμασθεῖην. DEM. 30, 6.

(c) καὶ τούτου γε δήπου τίς ἂν ἐπιθυμήσειεν; PLAT. Symp. 200.

(d) λέγω εἰ μὲν βούλεσθε, ὡς παίζων, εἰ δὲ, ὡς σπουδάζων. PLAT. Legg. 3, 688.

Emend:

(e) νῦν οὖν σιώπα, παῖς ὅδ' ὡς πέφυκε σός,
ἴν' ἢ δόκησις Ξοῦθον ἡδέως ἔχῃ,
σύ τ' αὖ τὰ σαύτης ἀγάθ' ἔχουσ' εἴης, γύναι. EUR. Ion. 1601—3.

(f) Σωκράτης ἐπιγυγνώσκει Θεόδωρον καὶ Θεαίτητον, ὁρᾷ δὲ μηδέτερον, μηδὲ ἄλλη αἰσθησις αὐτῷ πάρεστι περὶ αὐτῶν· οὐκ ἂν ποτε ἐν ἑαυτῷ δοξάσειεν ὡς ὁ Θεαίτητος ἐστὶ Θεόδωρος. PLAT. Theaet. 193.

5. Σπάρτην ἔλαχες κείνην κόσμει. Where does this come from, and in what respect does its original meaning differ from its ordinary application?

6. Restore and explain either of the following inscriptions:

(a) ΚΑΛΑΔΙΚΑΙΜΕΓΑΡΕΥCΙΝΕΛΕΥΘΕΡΟΝΑΜΑΡΑΕΞΙΝ
ΠΕΜΕΝΟΙΘΑΝΑΤΟΥΛΟΙΡΑΝΕΔΕΞΑΜΘΟΑΜΕ
ΤΟΙΜΕΝΥΠΕΥΡΟΙΑΚ . ΙΠΑΧΩΕΝΘΑΚΛΑΕΙΤΕ
ΕΑΓΝΑΕΑΡΤΕΜΙΔΟCΤΟΞΟΦΟΙΟΥΤΕΜΕΝΟC
ΤΟΙΔΕΝΟΡΙΜΟΙΚΑΛΑCΤΟΙΔΕΝΠΡΟCΘΕCΑΛΑΜΕΙΝΟC.

SIMONIDES.

or (b) ΕΚΚΑΙΔΕΧΕΤΗC
ΙΔΩΝΤΥΜΒΩCΚΕΦΘΕΝΤ
ΥΠΟΜΟΙΡΗC ΕΡΜΗΝ
ΚΟΜΜΑΓΗΝΟΝΕΠΟC
ΦΡΑCΑΤΩΤΟΔΟΔΕΙΤΗC
ΧΑΙΡΕCΥΠΑΙΠΑΡΕΜΟΥ
ΚΗΝΠΕΡΘΗΝΗΤΟΝΒΙΟ
ΕΡΠΗC ΩΚΥΤΑΤΕΠ
ΤΗCΓΑΡΜΕΡΟΠΩΝΕΠΙ
ΚΙΜΜΕΡΙΩΝΓΗ ΚΟΥΨΕΥ
CΕΙ...ΓΑΡΟΠΑΙCΕΡΜΗC
.....

From the Brough Stone.

SATURDAY, January 24, 1885 10.30 to 12.

LATIN GENERAL PAPER (B).

1. *Superior armis luxuria incubuit*, Juv. VI 291. Give an account of the provisions and the effect of the various sumptuary laws passed in Rome from the *lex Oppia* in 215 B.C. to the *lex Cornelia* in B.C. 51.
 2. Describe the condition of Greece and Asia Minor under Tiberius.
 3. Compare the usage of the Greek and Latin languages, in point of (1) absolute constructions, (2) subordinate relative sentences in *oratio obliqua*.
 4. Investigate the syntactical difficulties of the following passages:
 - (a) illa petit Nilum cymba mala nixa fugaci
hoc unum iusso non moritura die. PROP. V 6, 63.
 - (b) quid stultius quam haec ponere in bonis potius quam dicerent sumenda esse.
CIC. *de Fin.* IV 20.
 - (c) isdem ex libris perspicies et quae gesserim et quae dixerim, aut ne poposcisse.
ad ATT. II 1 § 3.
 - (d) utor tam bene quam mihi pararim. CAT. 10.
 5. Give some account of the progress of Latin lexicography since the time of Forcellini, and of its present state.
 6. Name four Dutchmen, eminent as Latin scholars, and specify their chief works.
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BELL AND ABBOTT SCHOLARSHIPS.

MONDAY, March 2, 1885. 9—12.

I. 1. QUOTE the references to Esau in the New Testament; and shew what light they throw upon his character and position in regard to the Divine Revelation.

2. Describe the ritual of the Day of Atonement.

3. Give, with any notes which seem to be required, the original context of the following passages, and the use which is made of them in the New Testament:

(a) *In thy seed shall all the kingdoms of the earth be blessed.*

(b) *A prophet shall the Lord your God raise up unto you of your brethren, like unto me.*

(c) *Himself took our infirmities and bare our sicknesses.*

(d) *I said Ye are gods.*

II. 1. Give, without comment, a tabular statement of the recorded events of the Day of the Resurrection, mentioning the Evangelists by whom they are severally related.

2. State as fully as you can the substance of St Paul's speech at Athens, and shew its peculiar fitness for the occasion.

3. Quote St Paul's account of the Institution of Holy Communion. Can you quote other references to Holy Communion from the Epistles?

III. 1. Translate, with short notes, the following passages:

(a) λέγει αὐτῷ τὸ τρίτον Σίμων Ἰωάννου, φιλεῖς με; ἐλυπήθη ὁ Πέτρος ὅτι εἶπεν αὐτῷ τὸ τρίτον Φιλεῖς με; καὶ εἶπεν αὐτῷ Κύριε, πάντα σὺ οἶδας, σὺ γινώσκεις ὅτι φιλῶ σε. λέγει αὐτῷ Ἰησοῦς Βόσκει τὰ προβάτιά μου.

(b) μετανόησον οὖν ἀπὸ τῆς κακίας σου ταύτης, καὶ δεήθητι τοῦ κυρίου εἰ ἄρα ἀφεθήσεται σοι ἡ ἐπίνοια τῆς καρδίας σου· εἰς γὰρ χολὴν πικρίας καὶ σύνδεσμον ἀδικίας ὀρῶ σε ὄντα.

(c) ἐμοὶ δὲ εἰς ἐλάχιστόν ἐστιν ἵνα ὑφ' ὑμῶν ἀνακριθῶ ἢ ὑπὸ ἀνθρωπίνης ἡμέρας· ἀλλ' οὐδὲ ἐμαυτὸν ἀνακρίνω· οὐδὲν γὰρ ἐμαυτῷ σύνοιδα, ἀλλ' οὐκ ἐν τούτῳ δεικαίωμαι, ὃ δὲ ἀνακρίνων με κύριός ἐστιν.

(d) ἔστιν δὲ πίστις ἐλπίζομένων ὑπόστασις, πραγμάτων ἑλεγχος οὐ βλεπομένων· ἐν ταύτῃ γὰρ ἐμαρτυρήθησαν οἱ πρεσβύτεροι· Πίστει νοοῦμεν κατηρτίσθαι τοὺς αἰῶνας ῥήματι θεοῦ, εἰς τὸ μὴ ἐκ φαινομένων τὸ βλεπόμενον γεγενῆναι.

2. Give the original of the following passages of the A.V. with any corrections of the rendering which seem to be necessary:

(a) In your patience possess ye your souls.

(b) Repent ye therefore, and be converted, that your sins may be blotted out, when the times of refreshing shall come from the presence of the Lord.

(c) From henceforth let no man trouble me: for I bear in my body the marks of the Lord Jesus.

(d) And I said unto him, Sir, thou knowest. And he said to me, These are they which came out of great tribulation, and have washed their robes, and made them white in the blood of the Lamb.

IV. 1. Shew as fully as you can from the Prayer-Book the relation of Baptism to Confirmation.

2. State very briefly the steps by which the Prayer-Book assumed its present form.

3. Comment on the epithets given to the Church in the Apostles' and Nicene Creeds.

V. State very shortly (with dates) what you know of *Anselm*, *Bp. Burnet*, *Chrysostom*, *Huss*, *St Louis*, *Melanchthon*, *Abp. Parker*, *Savonarola*, *Whitfield*.

MONDAY, March 2, 1885. 1—4.

TRANSLATE into ENGLISH PROSE:

1. τὸν δ' ἀπαμειβόμενος προσέφη πόδας ὠκὺς Ἀχιλλεύς
 Φοῖνιξ, ἄττα γεραιέ, διотреφεῖς, οὔτι με ταύτης
 χρεὼ τιμῆς· φρονέω δὲ τετιμῆσθαι Διὸς αἴση,
 ἧ μ' ἔξει παρὰ νηυσὶ κορωνίσιν, εἰσόκ' αὐτμῇ
 ἐν στήθεσσι μένη καί μοι φίλα γούνατ' ὀρώρη.
 ἄλλο δέ τοι ἐρέω, σὺ δ' ἐνὶ φρεσὶ βάλλεο σῆσιν·
 μή μοι σύγχει θυμὸν ὀδυρόμενος καὶ ἀχεύων,
 Ἀτρεΐδῃ ἥρωϊ φέρων χάριν· οὐδέ τί σε χρὴ
 τὸν φιλέειν, ἵνα μή μοι ἀπέχθῃαι φιλέοντι.
 καλὸν τοι σὺν ἐμοὶ τὸν κήδειν ὅς κ' ἐμὲ κήδῃ.
 ἴσον ἐμοὶ βασίλευε καὶ ἥμισυ μείρεο τιμῆς.
 οὔτοι δ' ἀγγελέουσι, σὺ δ' αὐτόθι λέξεο μίμνων
 εὐνῇ ἐνὶ μαλακῇ· ἅμα δ' ἡοὶ φαινομένηφιν
 φρασσόμεθ' ἧ κε νεώμεθ' ἐφ' ἡμέτερ', ἧ κε μένωμεν.
 ἧ καὶ Πατρόκλῳ ὄγ' ἐπ' ὀφρύσι νεῦσε σιωπῇ
 Φοῖνικι στορέσαι πυκνὸν λέχος, ὅφρα τάχιστα
 ἐκ κλισίης νόσταιο μεδοίατο. τοῖσι δ' ἄρ' Αἴας
 ἀντίθεος Τελαμωνιάδης μετὰ μῦθον ἔειπεν

Διογενὲς Λαερτιάδῃ, πολυμήχαν' Ὀδυσσεῦ,
 ἵομεν οὐ γάρ μοι δοκείε μύθοιο τελευτὴ
 τῇδ' ἔγ' ὁδῷ κρανεέσθαι· ἀπαγγεῖλαι δὲ τάχιστα
 χρὴ μῦθον Δαναοῖσι, καὶ οὐκ ἀγαθόν περ ἔόντα,
 οἳ που νῦν ἔσται ποτιδέγμενοι. αὐτὰρ Ἀχιλλεὺς
 ἄγριον ἐν στήθεσσι θέτο μεγαλήτορα θυμὸν
 σχέτλιος, οὐδὲ μετατρέπεται φιλότητος ἑταίρων
 τῆς ἧ' μιν παρὰ νηυσὶν ἐτίομεν ἔξοχον ἄλλων,
 νηλὴς· καὶ μὲν τίς τε κασιγνήτοιο φονῆος
 ποινὴν ἧ' οὐ παιδὸς ἐδέξατο τεθνηῶτος·
 καὶ ῥ' ὁ μὲν ἐν δῆμῳ μένει αὐτοῦ, πόλλ' ἀποτίσας,
 τοῦ δὲ τ' ἐρητύεται κραδίη καὶ θυμὸς ἀγῆνωρ
 ποινὴν δεξαμένου. σοὶ δ' ἄλληκτόν τε κακόν τε
 θυμὸν ἐνὶ στήθεσσι θεοὶ θέσαν εἵνεκα κούρης
 οἷης. νῦν δέ τοι ἐπὶ παρὶσχομεν ἔξοχ' ἀρίστας,
 ἄλλα τε πόλλ' ἐπὶ τῇσι· σὺ δ' ἴλαον ἔνθεο θυμὸν,
 αἰδεσσαι δὲ μέλαθρον· ὑπώροφιοι δέ τοί εἰμεν
 πληθύνος ἐκ Δαναῶν, μέμαμεν δέ τοι ἔξοχον ἄλλων
 κήδιστοί τ' ἔμεναι καὶ φίλτατοι, ὅσσοι Ἀχαιοί.

HOMER, *Iliad*, IX. 606—642.

2. ΔΗ. ἀλλ' αὐτὰ δὴ σοι ταῦτα καὶ πρᾶσσω, Λίχῃα,
 ἕως σὺ ταῖς ἔσωθεν ἡγορῷ ξέναις,
 ὅπως φέρῃς μοι τόινδε ταναῦφῃ πέπλον,
 δώρημ' ἐκείνῳ τάνδρ' ἡμῇς χερὸς.
 διδούς δὲ τόνδε φράζ' ὅπως μηδεὶς βροτῶν
 κείνου πάροιθεν ἀμφιδύσεται χροῖ,
 μηδ' ὄψεται νιν μήτε φέγγος ἡλίου
 μήθ' ἔρκος ἱρὸν μήτ' ἐφέστιον σέλας,
 πρὶν κείνος αὐτὸν φανερόν ἐμφανὲς σταθεῖς
 δείξῃ θεοῖσιν ἡμέρᾳ ταυροσφάγῃ.
 οὕτω γὰρ ἠϋγμην, εἴ ποτ' αὐτὸν ἐς δόμους
 ἴδοιμι σωθέντ' ἧ' κλύοιμι πανδίκως,
 στελεῖν χιτῶνι τῷδε, καὶ φανεῖν θεοῖς
 θυτῆρα καινῷ καινὸν ἐν πεπλώματι.
 καὶ τῶνδ' ἀποίσεις σῆμ', ὃ κείνος εὐμαθὲς
 σφραγίδος ἔρκει τῷδ' ἐπὶ μαθήσεται.
 ἀλλ' ἔρπε, καὶ φύλασσε πρῶτα μὲν νόμον,
 τὸ μὴ ἵπιθυμῆν πομπὸς ὧν περισσὰ δρᾶν·
 ἔπειθ' ὅπως ἂν ἡ χάρις κείνου τέ σοι
 κάμου ξυνέλθουσ' ἐξ ἀπλῆς διπλῇ φανῇ.
- ΑΙ. ἀλλ' εἴπερ Ἑρμοῦ τήνδε πομπεύω τέχνην
 βέβαιον, οὐ τι μὴ σφαλῶ γ' ἐν σοί ποτε,
 τὸ μὴ οὐ τόδ' ἄγγος ὥς ἔχει δεῖξαι φέρων,
 λόγων τε πίστιν ὧν ἔχεις ἐφαρμόσαι.

SOPHOCLES, *Trachiniae*, 600—623.

3. ὦ δόξα δόξα, μυρίοισι δὴ βροτῶν
 οὐδὲν γεγῶσι βίοτον ὥγκωσας μέγαν.
 εὐκλεία δ' οἷς μὲν ἔστ' ἀληθείας ὕπο,
 εὐδαιμονίζω· τοὺς δ' ὑπὸ ψευδῶν ἔχειν
 οὐκ ἀξιόσω πλὴν τύχῃ φρονεῖν δοκεῖν.
 σὺ δὲ στρατηγῶν λογάσιν Ἑλλήνων ποτὲ
 Τροίαν ἀφείλου Πρίαμον, ὅδε φαῦλος ὢν;
 ὅστις θυγατρὸς ἀντίπαιδος ἐκ λόγων
 τοσόνδ' ἔπνευσας καὶ γυναικὶ δυστυχεῖ
 δούλῃ κατέστης εἰς ἀγῶν'. οὐκ ἀξιῶ
 οὐτ' οὖν σὲ Τροίας οὔτε σοῦ Τροίαν ἔτι.
 ἔξωθὲν εἰσιν οἱ δοκοῦντες εὖ φρονεῖν
 λαμπροί, τὰ δ' ἔνδον πᾶσιν ἀνθρώποις ἴσοι,
 πλὴν εἴ τι πλούτῳ τοῦτο δ' ἰσχύει μέγα.
 Μενέλαε, φέρε δὴ διαπεράνωμεν λόγους·
 τέθηκα δὴ σῇ θυγατρὶ καὶ μ' ἀπώλεσε·
 μισαιφόνον μὲν οὐκέτ' ἂν φύγοι μύσος,
 ἐν τοῖς δὲ πολλοῖς καὶ σὺ τόνδ' ἀγωνιεῖ
 φόνον· τὸ συνδρῶν γάρ σ' ἀναγκάσει χρέος.
 ἦν δ' οὖν ἐγὼ μὲν μὴ θανεῖν ὑπεκδράμω,
 τὸν παῖδά μου κτενεῖτε; κῆρα πῶς πατήρ
 τέκνου θανόντος ῥαδίως ἀνέξεται;
 οὐχ ὥδ' ἄνδρον αὐτὸν ἢ Τροία καλεῖ.

EURIPIDES, *Andromache*, 319—341.

4. ΣΤΡ. χᾶτερά γε πόλλ'. ἀλλ' ὅ τι μάθοιμ' ἐκάστοτε,
 ἐπελανθανόμην ἂν εὐθὺς ὑπὸ πλήθους ἐτῶν.
 ΦΕΙ. διὰ ταῦτα δὴ καὶ θοιμάτιον ἀπώλεσας;
 ΣΤΡ. ἀλλ' οὐκ ἀπολώλεκ', ἀλλὰ καταπεφρόντικα.
 ΦΕΙ. τὰς δ' ἐμβάδας ποῖ τέτροφας, ὠνόητε σύ;
 ΣΤΡ. ὥσπερ Περικλῆς εἰς τὸ δέον ἀπώλεσα.
 ἀλλ' ἴθι, βάδιζ', ἴωμεν· εἴτα τῷ πατρὶ
 πειθόμενος ἐξάμαρτε καὶ γὰρ τοί ποτε
 οἶδ' ἐξέτει σοι τραυλίσαντι πιθόμενος·
 ὃν πρῶτον ὀβολὸν ἔλαβον Ἑλιαστικόν,
 τούτου ἑπριάμην σοι Διασίοις ἀμαξίδα.
 ΦΕΙ. ἦ μὴν σὺ τούτοις τῷ χρόνῳ ποτ' ἀχθέσει.
 ΣΤΡ. εὖ γ' ὅτι ἐπείσθης. δεῦρο δεῦρ', ὦ Σώκρατες,
 ἔξελθ'. ἄγω γάρ σοι τὸν υἱὸν τουτονί,
 ἄκοντ' ἀνακείσας. ΣΩ. νηπύτιος γάρ ἐστ' ἔτι,
 καὶ τῶν κρεμαστρῶν οὐ τρίβων τῶν ἐνθάδε.
 ΦΕΙ. αὐτὸς τρίβων εἴης ἂν, εἰ κρέμαιό γε.
 ΣΤΡ. οὐκ ἐς κόρακας; καταρᾷ σὺ τῷ διδασκάλῳ;
 ΣΩ. ἰδοὺ κρέμαι', ὥς ἡλίθιον ἐφθέγγετο
 καὶ τοῖσι χεῖλεσιν διερρηκόσιν.

πῶς ἂν μάθοι ποθ' οὗτος ἀπόφενξιν δίκης
 ἢ κλῆσιν ἢ χαύνωσιν ἀναπειστηρίαν;
 καίτοι γε ταλάντου τοῦτ' ἔμαθεν Ὑπέρβολος.
 ΣΤΡ. ἀμέλει, δίδασκε θυμόσοφός ἐστιν φύσει·
 εὐθύς γέ τοι παιδάριον ὃν τυννουτονὶ
 ἔπλαττεν ἔνδον οἰκίας ναῦς τ' ἔγλυφεν,
 ἀμαξίδας τε σκυτίνας εἰργάζετο,
 καὶ τῶν σιδίων βατράχους ἐποίει πῶς δοκεῖς.
 ὅπως δ' ἐκείνῳ τὸ λόγῳ μαθήσεται,
 τὸν κρείττον', ὅστις ἐστί, καὶ τὸν ἥττονα.

ARISTOPHANES, *Nubes*, 854—883.

TUESDAY, *March 3*, 1885. 9—12.

FOR LATIN PROSE:

THE queen now prepared for suffering the death to which she was sentenced. She sent her last message to the king, and acknowledged the obligations which she owed him, in his uniformly continuing his endeavours for her advancement: From a private gentlewoman, she said, he had first made her a marchioness, then a queen, and now, since he could raise her no higher in this world, he was sending her to be a saint in heaven. She then renewed the protestations of her innocence, and recommended her daughter to his care. Before the lieutenant of the Tower, and all who approached her, she made the like declarations; and continued to behave herself with her usual serenity, and even with cheerfulness. "The executioner," she said to the lieutenant, "is, I hear, very expert; and my neck is very slender." Upon which she grasped it in her hand, and smiled. When brought, however, to the scaffold, she softened her tone a little with regard to her protestations of innocence. She probably reflected that the obstinacy of queen Catherine, and her opposition to the king's will, had much alienated him from the lady Mary: Her own maternal concern, therefore, for Elizabeth, prevailed in these last moments over that indignation which the unjust sentence by which she suffered naturally excited in her. She said that she was come to die, as she was sentenced by the law: She would accuse none, nor say any thing of the ground upon which she was judged. She prayed heartily for the king; called him a most merciful and gentle prince; and acknowledged that he had always been to her a good and gracious sovereign; and if any one should think proper to canvass her cause, she desired him to judge the best. She was beheaded by the executioner of Calais, who was sent for as more expert than any in England. Her body was negligently thrown into a common chest of elm-tree, made to hold arrows, and was buried in the Tower.

HUME.

TUESDAY, *March 3*, 1885. 1—4 P.M.

TRANSLATE with short marginal notes:—

- (1) Hercle vero, Libane, nunc te meliust expergiscier.
 iam diust factum quom discesti ab ero atque abiisti ad forum
 igitur inveniundo argento ut fingeres fallaciam.
 ibi tu ad hoc diei tempus dormitasti in otio.
 quin tu aps te socordiam omnem reicis, segnitiam amoves
 atque ad ingenium vetus vorsutum te recipis tuom?
 serva erum: cave tu idem faxis alii quod servi solent,
 qui ad eri fraudationem callidum ingenium gerunt.
 unde sumam? quem intervortam? quo hanc celocem conferam?
 inpetritum, inauguratumst: quovis admittunt aves.
 picus et cornix ab laeva, corvos, parra ab dextera
 consuadent: certum herclest vostram consequi sententiam.
 set quid hoc, quod picus ulmum tundit? hau temerariumst.
 certe hercle ego quantum ex augurio auspicioque intellego,
 aut mihi in mundo sunt virgae aut atriensi Saureae.
 set quid illuc, quod exanimatus currit huc Leonida?
 metuo quod illic opscaevavit meae falsae fallaciae.
 PLAUTUS, *Asinaria*, 249—266.

- (2) Lenem te miseris genuit natura. nec ulli
 mitius ingenium quam tibi, Brute, dedit:
 ut qui quid valeas ignoret Marte forensi
 posse tuo peragi vix putet ore reos.
 scilicet eiusdem est, quamvis pugnare videtur,
 supplicibus facilem, sontibus esse truce.
 cum tibi suscepta est legis vindicta severae,
 verba velut tinctum singula virus habent.
 hostibus eveniat quam sis violentus in armis
 sentire et linguae tela subire tuae.
 quae tibi tam tenui cura limantur, ut omnes
 istius ingenium corporis esse negent.
 at si quem laedi fortuna cernis iniqua,
 mollior est animo femina nulla tuo.
 hoc ego praecipue sensi, cum magna meorum
 notitiam pars est infitiata mei.
 OVID, *Epist.* IV. 6, 27—42.

- (3) Nullus argento color est avaris
 abdito terris, inimice lamnae
 Crispe Salusti, nisi temperato
 splendeat usu.
 vivet extento Proculius aevo
 notus in fratres animi paterni:
 illum aget penna metuente solvi
 fama superstes.
 latius regnes avidum domando
 spiritum, quam si Libyam remotis
 Gadibus iungas et uterque Poenus
 serviat uni.

crescit indulgens sibi dirus hydrops
 nec sitim pellit, nisi causa morbi
 fugerit venis et aquosus albo
 corpore languor.
 redditum Cyri solio Phrahaten
 dissidens plebi numero beatorum
 eximit virtus, populumque falsis
 dedocet uti
 vocibus, regnum et diadema tutum
 deferens uni propriamque laurum,
 quisquis ingentes oculo inretorto
 spectat acervos.

HORACE, *Carm.* II. 2.

- (4) Noxia civili tellus Aegyptia fato,
 haud equidem immerito Cumanae carmine vatis
 cautum, ne Nili Pelusia tangeret ora
 Hesperius miles, ripasque aestate tumentes.
 quid tibi saeva precer pro tanto crimine tellus?
 vertat aquas Nilus quo nascitur orbe retentus,
 et steriles egeant hibernis imbribus agri,
 totaque in Aethiopum putres solvaris arenas.
 nos in templa tuam Romana accepimus Isin,
 semicanesque deos, et sinistra iubentia luctus,
 et quem tu plangens hominem testaris Osirin:
 tu nostros, Aegypte, tenes in pulvere manes.
 tu quoque, cum saevo dederis iam templa tyranno,
 nondum Pompeii cineres, o Roma, petisti:
 exsul adhuc iacet umbra ducis. si saecula prima
 victoris timuere minas; nunc excipe saltem
 ossa tui Magni, si nondum subruta fluctu
 invisa tellure sedent. quis busta timebit?
 quis sacris dignam movisse verebitur umbram?

LUCAN, *VIII.* 823—841.

- (5) Experiere hodie, numquid pulcherrima dictu,
 Persice, non praestem vita vel moribus et re,
 si laudem siliquas occultus ganeo, pultes
 coram aliis dictem puero, sed in aure placentas.
 nam cum sis conviva mihi promissus, habebis
 Euandrum, venies Tirynthius aut minor illo
 hospes, et ipse tamen contingens sanguine caelum,
 alter aquis, alter flammis ad sidera missus.
 fercula nunc audi nullis ornata macellis.
 de Tiburtino veniet pinguissimus agro
 haedulus et toto grege mollior, inscius herbae,
 necdum ausus virgas humilis mordere salicti,
 qui plus lactis habet quam sanguinis, et montani
 asparagi, posito quos legit vilica fuso;
 grandia praeterea tortoque calentia faeno
 ova adsunt ipsis cum matribus, et servatae
 parte anni, quales fuerant in vitibus, uvae,
 Signinum Syriumque pirum, de corbibus isdem
 aemula Picenis et odoris mala recentis:
 nec metuenda tibi, siccatum frigore postquam
 auctumnum et crudi posuere pericula suci.

IUVENAL, *XI.* 56—76.

WEDNESDAY, March 4, 1885. 1—4.

TRANSLATE INTO ENGLISH PROSE:

1. Pro di immortales! hoc aut innocens homo perpeti potuisset aut quamvis nocens, qui modo iudicia Romae fore putaret, non aliqua simulatione existimationi se hominum venditasset? Quid est hoc? Sponsio fit de capite ac fortunis tuis: tu sedes et quiescis? non persequeris? non perseveras? non perquiris cui dixerit Apronius, quis audierit, unde hoc natum, quem ad modum prolatum sit? Si tibi aliquis ad aurem accessisset et dixisset Apronium dictitare te sibi esse socium, commoveri te oportuit, evocare Apronium nec illum ante tibi satis facere, quam tu omnium existimationi satis fecisses: quum vero in foro celeberrimo, tanta frequentia hoc verbo ac simulatione Apronio, re vera tibi obiectum esset, tu umquam tantam plagam tacitus accipere potuisses, nisi hoc ita statuisses, in re manifesta quidquid dixisses te deterius esse facturum? Quaestores, legatos, praefectos, tribunos suos multi missos fecerunt et de provincia decedere iusserunt, quod illorum culpa se minus commode audire arbitrarentur aut quod peccare ipsos aliqua in re iudicaret: tu Apronium, hominem vix liberum, contaminatum, perditum, flagitiosum, qui non modo animum integrum, sed ne animam quidem puram conservare potuisset, eum in tanto tuo dedecore profecto ne verbo quidem graviore appellasses, neque apud te tam sancta religio societatis fuisset, ut tui capitis periculum negligeres, nisi rem tam notam esse omnibus et tam manifestam videres.

CICERO, in *Verrem*, Act. II. iii. 58.

2. Eumeni ante omnes infestus erat; a cuius sanguine ordiens bellum, Euan-drum Cretensem, ducem auxiliorum, et Macedonas tres adsueto ministeriis talium facinorum ad caedem regis subornat, litterasque eis dat ad Praxo hospitam, principem auctoritate et opibus Delphorum. Satis constabat Eumenem, ut sacrificaret Apollini, Delphos escensurum. Praegressi cum Euandro insidiatores nihil aliud ad peragendum inceptum quam loci opportunitatem, omnia circumeuntes, quaerebant. Escendentibus ad templum a Cirrha, priusquam perveniretur ad frequentia aedificiis loca, maceria erat ab laeva in semitam paulum exstantem a fundamento qua singuli transirent, dextra pars labe terrae in aliquantum altitudinis derupta erat. Post maceriam se abdiderunt gradibus adstructis, ut ex ea velut e muro tela in praetereuntem conicerent. Primo a mari circumfusa turba amicorum ac satellitum procedebat, deinde extenuabant paulatim angustiae agmen. Ubi ad eum locum ventum est, qua singulis eundum erat, primus semitam ingressus Pantaleon Aetoliae princeps, cum quo institutus regi sermo erat. Tum insidiatores exorti saxa duo ingentia devolvunt, quorum altero caput ictum est regi, altero humerus; sopitusque ex semita proclivi ruit in declive, multis super prolapsus iam saxis congestis. Et ceteri quidem etiam amicorum et satellitum, postquam cadentem videre, diffugiunt: Pantaleon constanter impavidus mansit ad protegendum regem. Latrones cum brevi circumitu maceriae decurrere ad conficiendum saucium possent, velut perfecta re in iugum Parnasi refugerunt eo cursu, ut, cum unus non facile sequendo per invia atque ardua moraretur fugam eorum, ne ex comprehenso indicium emanaret, occiderint comitem.

LIVIVS, XLII. 15.

3. Sed ab hoc profectus initio, ne frustra ingressus turpem causam videretur, legem promulgavit, ut sexenni die sine usuris creditae pecuniae solvantur. Cum resisteret Servilius consul reliquique magistratus et minus opinione sua efficeret, ad hominum excitanda studia sublata priore lege duas promulgavit: unam, qua mercedes habitationum annuas conductoribus donavit, aliam tabularum novarum, impetuque multitudinis in C. Trebonium facto et nonnullis vulneratis eum de tribunali deturbavit. De quibus rebus Servilius consul ad senatum retulit, senatusque Coelium ab republica removendum censuit. Hoc decreto eum consul senatu prohibuit et contionari conantem de rostris deduxit. Ille ignominia et dolore permotus palam se proficisci ad Caesarem simulavit; clam nuntiis ad Milonem missis, qui Clodio interfecto eo nomine erat damnatus, atque eo in Italiam evocato, quod magnis muneribus datis gladiatoriae familiae reliquias habebat, sibi coniunxit atque eum in Thurinum ad sollicitandos pastores praemisit. Ipse cum Casilinum venisset unoque tempore signa eius militaria atque arma Capuae essent comprehensa et familia Neapoli, vis atque proditio oppidi appareret, patefactis consiliis exclusus Capua et periculum veritus, quod conventus arma ceperat atque eum hostis loco habendum existimabat, consilio destitit atque eo itinere sese avertit. Interim Milo dimissis circum municipia litteris, ea, quae faceret, iussu atque imperio facere Pompei, quae mandata ad se per Vibullium delata essent, quos ex aere alieno laborare arbitrabatur, sollicitabat. Apud quos cum proficere nihil posset, quibusdam solutis ergastulis Cosam in agro Thurino oppugnare coepit.

CAESAR, *bell. civile*, III. 20—22.

4. Quis nunc feret oratorem de infirmitate valetudinis suae praefantem? qualia sunt fere principia Corvini. quis quinque in Verrem libros expectabit? quis de exceptione et formula perpetietur illa immensa volumina quae pro M. Tullio aut Aulo Caecina legimus? praecurrit hoc tempore iudex dicentem, et nisi aut cursu argumentorum aut colore sententiarum aut nitore et cultu descriptionum invitatus et corruptus est, aversatur dicentem. vulgus quoque adsistentium et adfluens et vagus auditor adsuevit iam exigere laetitiam et pulchritudinem orationis: nec magis perfert in iudiciis tristem et impexam antiquitatem, quam si quis in scaena Roscii aut Turpionis Ambivii exprimere gestus velit. iam vero iuvenes et in ipsa studiorum incude positi, qui profectus sui causa oratores sectantur, non solum audire sed etiam referre domum aliquid inlustre et dignum memoria volunt; traduntque in vicem ac saepe in colonias et provincias suas scribunt, sive sensus aliquis arguta et brevi sententia effulsit, sive locus exquisito et poetico cultu enituit. exigitur enim iam ab oratore etiam poeticus decor, non Accii aut Pacuvii veterino inquinatus, sed ex Horatii et Vergilii et Lucani sacrario prolatus. horum igitur auribus et iudiciis obtemperans nostrorum oratorum aetas pulchrior et ornatio extitit. neque ideo minus efficaces sunt orationes nostrae, quia ad aures iudicantium cum voluptate perveniunt. quid enim, si infirmiora horum temporum templa credas, quia non rudi caemento et informibus tegulis extruuntur, sed marmore nitent et auro radiantur?

TACITUS, *dialogus de oratoribus*, XX.

THURSDAY, *March 5*, 1885. 9—12.

1. TRANSLATE into LATIN HEXAMETERS:

There is a pleasure in the pathless woods,
There is a rapture by the lonely shore,
There is society, where none intrudes,
By the deep sea, and music in its roar!
I love not man the less, but nature more,
From these our interviews—in which I steal
From all I may be, or have been before,
To mingle with the universe, and feel
What I can ne'er express, yet cannot all conceal.

Roll on, thou deep and dark blue ocean—roll!
Ten thousand fleets sweep over thee in vain;
Man marks the earth with ruin—his control
Stops with the shore; upon the watery plain
The wrecks are all thy deed, nor doth remain
A shadow of man's ravage, save his own,
When, for a moment, like a drop of rain,
He sinks into thy depths with bubbling groan—
Without a grave, unknelled, uncoffined and unknown.

BYRON.

2. LATIN ELEGIACS:

ἀνδρῶν ἐπιφανῶν πᾶσα γῆ τάφος.

THURSDAY, March 5, 1885. 1—4.

TRANSLATE, with short marginal notes where necessary:

1. Τοσαῦτα μὲν θυμάτων περὶ εἰρήσθω, ἀπόζει δὲ τῆς χώρας τῆς Ἀραβίης θεσπέσιον ὡς ἡδύ. δύο δὲ γένεα οἶων σφί ἐστι θώνματος ἄξια, τὰ οὐδumόθι ἐτέρωθι ἐστί· τὸ μὲν αὐτῶν ἕτερον ἔχει τὰς οὐράς μακράς, τριῶν πηχέων οὐκ ἐλάσσονας, τὰς εἴ τις ἐπεὶ σφί ἐπέλκειν, ἔλκεα ἂν ἔχοιεν ἀνατριβομένων πρὸς τῇ γῇ τῶν οὐρέων· νῦν δ' ἅπας τις τῶν ποιμένων ἐπίσταται ξυλουργεῖν ἐς τοσοῦτο· ἀμαξίδας γὰρ ποιεῦντες ὑποδέουσι αὐτὰς τῇσι οὐρῇσι, ἐνὸς ἐκάστου κτήνεος τὴν οὐρὴν ἐπὶ ἀμαξίδα ἐκάστην καταδέοντες. τὸ δὲ ἕτερον γένος τῶν οἶων τὰς οὐράς πλατέας φορέουσι, καὶ ἐπὶ πῆχυν πλάτος. Ἀποκλινομένης δὲ μεσαμβρίας παρήκει πρὸς δύνοντα ἥλιον ἡ Αἰθιοπική χώρα ἐσχάτη τῶν οἰκομένων· αὕτη δὲ χρυσόν τε φέρει πολλὸν καὶ ἐλέφαντας ἀμφιλαφείας καὶ δένδρεα πάντα ἄγρια καὶ ἔβενον καὶ ἄνδρας μεγίστους καὶ καλλίστους καὶ μακροβιωτάτους. Αὐταὶ μὲν νῦν ἔν τε τῇ Ἀσίῃ ἐσχατιαὶ εἰσι καὶ ἐν τῇ Λιβύῃ· περὶ δὲ τῶν ἐν τῇ Εὐρώπῃ τῶν πρὸς ἐσπέρην ἐσχατιῶν ἔχω μὲν οὐκ ἀτρεκέως λέγειν· οὔτε γὰρ ἔγωγε ἐνδέκομαι Ἡριδανόν [τινα] καλέεσθαι πρὸς βαρβάρων ποταμὸν ἐκδιδόντα ἐς θάλασσαν τὴν πρὸς βορέην ἄνεμον, ἀπ' ὅτε τοῦ ἤλεκτρον φοιτᾶν λόγος ἐστὶ, οὔτε νήσους οἶδα Κασσιτερίδας εἰσάσας, ἐκ τῶν ὁ κασσίτερος ἡμῖν φοιτᾶ. τοῦτο μὲν γὰρ ὁ Ἡριδανὸς αὐτὸ κατηγορεῖ τὸ οὐνομα, ὡς ἐστὶ Ἑλληνικὸν καὶ οὐ βάρβαρον, ὑπὸ ποιητέῳ δὲ τινος ποιηθὲν, τοῦτο δὲ οὐδενὸς αὐτόπτεω γενομένου [οὐ] δύναμαι ἀκοῦσαι τοῦτο μελετῶν, ὅπως θάλασσά ἐστι τὰ ἐπέκεινα τῆς Εὐρώπης. ἐξ ἐσχάτης δ' ὧν δ' τε κασσίτερος ἡμῖν φοιτᾶ καὶ τὸ ἤλεκτρον.

HERODOTUS III. 113—115.

2. Ὁ δὲ ἀκούσας ἀνίστησί τε αὐτὸν μετὰ τοῦ ἑαυτοῦ υἱέος (ὥσπερ καὶ ἔχων αὐτὸν ἐκαθέζετο, καὶ μέγιστον ἦν ἰκέτευμα τοῦτο) καὶ ὕστερον οὐ πολλῷ τοῖς Λακεδαιμονίοις καὶ Ἀθηναίοις ἐλθοῦσι καὶ πολλὰ εἰποῦσιν οὐκ ἐκδίδωσιν, ἀλλ' ἀποστέλλει βουλόμενον ὡς βασιλέα πορευθῆναι ἐπὶ τὴν ἐτέραν θάλασσαν περὶ εἰς Πύδναν τὴν Ἀλεξάνδρου. ἐν ᾗ ὁλκάδος τυχὼν ἀναγομένης ἐπ' Ἰωνίας καὶ ἐπιβάς καταφέρεται χειμῶνι ἐς τὸ Ἀθηναίων στρατόπεδον ὃ ἐπουλιόρκει Νάξον. καί (ἦν γὰρ ἀγνὸς τοῖς ἐν τῇ νηὶ) δέισας φράζει τῷ ναυκλήρῳ ὅστις ἐστὶ καὶ δι' αὐτὸν φεύγει, καὶ εἰ μὴ σώσει αὐτόν, ἔφη εἰρῆναι ὅτι χρήμασι πεισθεὶς αὐτὸν ἄγει· τὴν δὲ ἀσφάλειαν εἶναι μηδένα ἐκβῆναι ἐκ τῆς νεῶς μέχρι πλοῦς γένηται· πειθομένῳ δ' αὐτῷ χάριν ἀπομνήσεσθαι ἄξιον. ὁ δὲ ναύκληρος ποιεῖ τε ταῦτα καὶ ἀποσαλεύσας ἡμέραν καὶ νύκτα ὑπὲρ τοῦ στρατοπέδου ὕστερον ἀφικνεῖται ἐς Ἐφεσον. καὶ ὁ Θεμιστοκλῆς ἐκεῖνόν τε ἐθεράπευσεν χρημάτων δόσει (ἦλθε γὰρ αὐτῷ ὕστερον ἔκ τε Ἀθηνῶν παρὰ τῶν φίλων καὶ ἐξ Ἀργεῶς αὐτὸν ὑπέξε-κειτο), καὶ μετὰ τῶν κάτω Περσῶν τινος πορευθεὶς ἄνω ἐσπέμπει γράμματα ἐς βασιλέα Ἀρταξέρξην τὸν Ξέρξου νεωστὶ βασιλεύοντα. ἐδήλου δ' ἡ γραφὴ ὅτι Θεμιστοκλῆς ἦκω παρὰ σέ, ὅς κακὰ μὲν πλείστα Ἑλλήνων εἴργασμαι τὸν ὑμέτερον οἶκον, ὅσον χρόνον τὸν σὸν πατέρα ἐπιόντα ἐμοὶ ἀνάγκη ἡμυνόμεν, πολὺ δ' ἔτι πλείω ἀγαθὰ, ἐπειδὴ ἐν τῷ ἀσφαλεῖ μὲν ἐμοί, ἐκείνῳ δὲ ἐν ἐπικινδύνῳ πάλιν ἡ ἀποκομιδὴ ἐγίγνετο. καὶ μοι εὐεργεσία ὀφείλεται (γράψας τὴν ἐκ Σαλαμῖνος

προάγγελσιν τῆς ἀναχωρήσεως καὶ τὴν τῶν γεφυρῶν, ἣν ψευδῶς προσεποιήσατο, τότε δι' αὐτὸν οὐ διάλυσιν), καὶ νῦν ἔχων σε μεγάλα ἀγαθὰ δρᾶσαι πάρειμι διωκόμενος ὑπὸ τῶν Ἑλλήνων διὰ τὴν σὴν φιλίαν. βούλομαι δ' ἐνιαυτὸν ἐπισχὼν αὐτός σοι περὶ ὧν ἤκω δηλῶσαι.

THUCYDIDES I. 137.

3. ἀλλ', ὦ μακάριε, ὄρα μὴ ἄλλο τι τὸ γενναῖον καὶ τὸ ἀγαθὸν ἢ τοῦ σώζειν τε καὶ σώζεσθαι. μὴ γὰρ τοῦτο μὲν, τὸ ζῆν ὅποσονδὲ χρόνον, τὸν γε ὡς ἀληθῶς ἄνδρα ἐατέον ἐστὶ καὶ οὐ φιλοψυχητέον, ἀλλὰ ἐπιτρέψαντα περὶ τούτων τῷ θεῷ καὶ πιστεύσαντα ταῖς γυναιξίν ὅτι τὴν εἰμαρμένην οὐδ' ἂν εἰς ἐκφύγοι, τὸ ἐπὶ τούτῳ σκεπτέον τί' ἂν τρόπον τοῦτον ὃν μέλλοι χρόνον βιῶναι ὡς ἄριστα βίῃ, ἀρα ἐξομοίων αὐτὸν τῇ πολιτείᾳ ταύτῃ ἐν ἣ ἂν οἰκῇ, καὶ νῦν δὲ ἄρα δεῖ σέ ὡς ὁμοιότατον γίγνεσθαι τῷ δήμῳ τῷ Ἀθηναίων, εἰ μέλλεις τούτῳ προσφιλεῖς εἶναι καὶ μέγα δύνασθαι ἐν τῇ πόλει; τοῦθ' ὄρα εἰ σοὶ λυσιτελεῖ καὶ ἐμοί, ὅπως μὴ, ὦ δαιμόνιε, πεισόμεθα ὅπερ φασὶ τὰς τὴν σελήνην καθαιρούσας, τὰς Θετταλίδας· σὺν τοῖς φιλτάτοις ἢ αἵρεσις ἡμῖν ἔσται ταύτης τῆς δυνάμεως τῆς ἐν τῇ πύλει. εἰ δέ σοι οἶει ὄντινόν· ἀνθρώπων παραδώσειν τέχνην τινὰ τοιαύτην, ἥτις σε ποιήσει μέγα δύνασθαι ἐν τῇ πόλει τῇδε ἀνόμοιον ὄντα τῇ πολιτείᾳ εἴτ' ἐπὶ τὸ βέλτιον εἴτ' ἐπὶ τὸ χεῖρον, ὡς ἐμοὶ δοκεῖ, οὐκ ὀρθῶς βουλευεῖ, ὦ Καλλίκλεις· οὐ γὰρ μιμητὴν δεῖ εἶναι ἀλλ' αὐτοφυῶς ὁμοιον τούτοις, εἰ μέλλεις τι γνήσιον ἀπεργάζεσθαι εἰς φιλίαν τῷ Ἀθηναίων δήμῳ καὶ ναὶ μὰ Δία τῷ Πυριλάμπους γε πρός. ὅστις οὖν σε τούτοις ὁμοιότατον ἀπεργάσεται, οὗτός σε ποιήσει, ὡς ἐπιθυμῆς πολιτικὸς εἶναι, πολιτικὸν καὶ ῥητορικόν· τῷ αὐτῶν γὰρ ἦθι λεγομένων τῶν λόγων ἕκαστοι χαίρουσι, τῷ δὲ ἀλλοτρίῳ ἄχθονται. εἰ μὴ τι σὺ ἄλλο λέγεις, ὦ φίλη κεφαλὴ. Λέγομέν τι πρὸς ταῦτα, ὦ Καλλίκλεις;

PLATO, *Gorgias*, 512 D—513 C.

4. οὗτος σαφῶς ὁ νόμος διείρηκεν, ὧν εἶναι δίκας προσήκει μεταλλικάς. οὐκοῦν ὁ μὲν νόμος, εἴαν τις ἐξείλλη τινὰ τῆς ἐργασίας, ὑπόδικον ποιεῖ· ἐγὼ δ' οὐχ ὅπως αὐτὸς ἐξείλω τούτον, ἀλλ' ὧν ἄλλος ἀπεστέρει, τούτων ἐγκρατῇ κατέστησα καὶ παρέδωκα, καὶ πρατὴρ τούτου δεηθέντος ἐγενόμην. ναί, φησίν· ἀλλὰ καὶ ἄλλο τι ἀδικῇ τις περὶ τὰ μέταλλα, καὶ τούτων εἰσὶ δίκαι. ὀρθῶς γ', ὦ Πανταίνετε· ἀλλὰ ταῦτα τί ἐστίν; ἂν τύφῃ τις, ἂν ὅπλα ἐπιφέρῃ, ἂν ἐπικατατέμνῃ τῶν μέτρων ἐντὸς, ταῦτά ἐστι τᾶλλα, ὧν οὐδὲν δήπου πέπρακται πρὸς ὑμᾶς ἐμοί· πλὴν εἰ, τοὺς κομιζομένους ἂ προεῖντό σοι, μεθ' ὑπλῶν ἦκειν νομίζεις. εἰ δὲ ταῦθ' ἡγῇ, πρὸς ἅπαντας τοὺς προῖεμένους τὰ ἑαυτῶν εἰσὶ σοι δίκαι μεταλλικάι· ἀλλ' οὐ δίκαιον. φέρε γὰρ, ὅστις μέταλλον παρὰ τῆς πόλεως πρίηται, τοὺς κοινούς παρελθὼν νόμους, καθ' οὓς καὶ διδόναι καὶ λαμβάνειν πᾶσι προσήκει δίκας, ἐν ταῖς μεταλλικαῖς δικάσεται; τί δὲ, εἴαν δανείσῃται παρὰ τοῦ; τί δὲ, εἴαν κακῶς ἀκούσῃ; εἴαν πληγὰς λάβῃ; εἴαν κλοπὴν ἐγκαλῇ; εἴαν προεισφορὰν μὴ κομίζῃται; εἴαν ὅλως ἄλλο τι; ἐγὼ μὲν οὐκ οἶμαι· ἀλλὰ τὰς μεταλλικὰς δίκας εἶναι τοῖς κοινωνοῦσι μετάλλου, καὶ τοῖς ἑτερον συντρήσασιν εἰς τὰ τῶν πλησίον, καὶ ὅλως τοῖς ἐργαζομένοις τὰ μέταλλα, καὶ τῶν ἐν τῷ νόμῳ τι ποιούσι· τῷ δὲ δανείσαντι Πανταίνετῳ, καὶ ταῦτ' ἀπειληφότι γλίσχρως καὶ μόλις, περὶ τούτου οὐκ εἶναι δίκην μεταλλικὴν προσφευκτέον, οὐδ' ἐγγύς.

DEMOSTHENES, c. *Pantaenetum*, p. 977.

FRIDAY, 6 March, 1885. 9—12.

1. If two triangles have two sides of the one equal to two sides of the other, each to each, but the angle contained by the two sides of one of them greater than the angle contained by the two sides equal to them of the other, the base of that which has the greater angle will be greater than the base of the other.

2. If the diagonals of a parallelogram be drawn, and a point lying between two opposite sides produced be taken, and joined with the four corners, among the triangles which have their vertices in that point the sum of those lying on the diagonals will be equal to the sum of those lying on the sides not produced; and the difference of those lying on the diagonals will be equal to the difference of those lying on the sides which were produced.

3. In any right-angled triangle, the square described upon the side subtending the right angle is equal to the sum of the squares described on the sides which contain the right angle.

4. Chords of a circle pass through a fixed point, find the locus of their middle points. Discuss the case in which the fixed point is external.

5. Given a triangle and a parallelogram on the same base, it is required to inscribe in the triangle a parallelogram standing on part of the same base, and having its sides and diagonals parallel to those of the given parallelogram.

6. Every solid angle is contained by plane angles which are together less than four right angles.

7. The first million numbers being reduced to decimals, how many circulating decimals will there be among them?

8. Find all the numbers less than 500 which being divided by 3, 5, 7, respectively leave remainders 1, 4, 3.

9. Observing that the cube of $5/4$ does not much differ from 2, apply the binomial theorem to find the cube root of 2 to 5 places of decimals.

10. Show how such an equation as $x^2 = 80$ may practically be solved numerically by the aid of a table of logarithms.

11. The roots of the biquadratic equation

$$192x^4 + \dots + 494x^3 + \dots + 27 = 0$$

are in geometric progression; supply the missing terms.

12. If the square root of an integer which is not a perfect square be reduced to a continued fraction, show that the partial quotients will circulate. Show also that any circulating continued fraction may be expressed by means of a quadratic surd.

13. If a bag contain m white and n black balls, and $p+q$ balls are drawn at random, find the chance that the balls drawn will consist of p white and q black, p being not greater than m nor q than n .

Given $p+q$, find the most probable distribution of the balls drawn between white and black.

FRIDAY, 6 March, 1885. 1—4.

1. A GROUP of m parallel lines is intersected by a group of n lines also parallel; in how many ways can a point travel from one corner to the opposite corner of the parallelogram formed by the exterior pairs of each group, moving along the lines in a path which is not longer than any other?

2. Assuming the expression for the cosine of one angle of a triangle in terms of the sides, deduce the expression for the sine of the angle; and apply it to show that the sines of the angles of any triangle are as the opposite sides.

3. From two stations the line joining which is of a known length and inclination to the horizon, the altitude and azimuth of a small cloud are simultaneously observed; find the height of the cloud using (1) both azimuths and one altitude, (2) both altitudes and one azimuth.

Under what circumstances is one or other of these methods to be preferred?

4. Prove that

$$\sin n\theta = \frac{n}{1} \sin \theta - \frac{n(n^2-1^2)}{1 \cdot 2 \cdot 3} \sin^3 \theta + \frac{n(n^2-1^2)(n^2-3^2)}{1 \cdot 2 \cdot 3 \cdot 4 \cdot 5} \sin^5 \theta - \dots$$

$$\cos n\theta = 1 - \frac{n^2}{1 \cdot 2} \sin^2 \theta + \frac{n^2(n^2-2^2)}{1 \cdot 2 \cdot 3 \cdot 4} \sin^4 \theta - \dots$$

whatever be the value of n provided θ lie between $-\frac{1}{2}\pi$ and $+\frac{1}{2}\pi$, and whatever be the value of θ provided n be an integer, odd in the first case, even in the second.

Supposing $n = \frac{1}{2}$, draw a figure representing the locus of the equation $y = f(x)$, where $x = \theta$, according as y represents the left-hand or the right-hand member of the former of the above equations.

5. A point is taken in each side of a triangle, and is joined with the opposite corner; prove that the ratio of the area of the triangle enclosed by the three joining lines to that of the original triangle is

$$(abc - a'b'c')^2 : (bc + b'c' + bc')(ca + c'a' + ca')(ab + a'b' + ab'),$$

where a, a', b, b', c, c' are the segments of the sides, taken in order.

6. Trace the curve

$$x^3 - 3xy^2 + ax^2 + ay^2 = b^3.$$

Find for what value or values of b it has singular points, and show what the curve becomes in that case.

7. Find

$$\int \frac{d\theta}{a + b \cos \theta}, \quad \int_0^\infty e^{-ax} dx, \quad \int_0^\infty e^{-ax} \cos 2ax dx.$$

8. Find the greatest ellipsoid which can be inscribed in a given triangular pyramid that has the three edges which meet in one corner perpendicular to each other, the principal axes of the ellipsoid being parallel to these edges respectively.

9. Enunciate the statical principle of virtual velocities; and apply it to find the condition of equilibrium in the common shop balance or letter weigher, in which the pan can only move without rotation.

Show that while the position of the weight or body on the pan does not affect the equilibrium, it does affect the strains on the joints, and find the strain on one of them.

10. A rigid body at rest in free space is struck by a blow acting in a given line; determine the initial motion.

11. A heavy particle moves on the perfectly smooth surface of a hollow circular cone with its axis vertical and vertex downwards; determine the motion, and prove that it is periodic.

Find the limiting heights that the particle will reach; and supposing there is little variation of height find the period.

12. Supposing the atmosphere of uniform temperature, and at rest, and neglecting the variation of gravity in ascending, show that the density decreases in geometric progression as we ascend.

Find roughly the height of the barometer on the top of a mountain 5000 feet high, supposing it to stand at 30 inches at the level of the sea, and the density of mercury to be 11000 times that of air at the sea level.

INDIAN LANGUAGES TRIPOS.

THURSDAY, *February* 12, 1885. 9—12 A.M.

TRANSLATE into SANSKRIT PROSE:

They brought the captive queen before him, and when he saw her he was well pleased with her and said, "Ulaca, tell me of thy affairs and conceal nothing from me; for thou knowest I may do with thee according to my will, being my captive." And when she heard this, it increased the grief which she had in her heart, and her sorrow was such that she had well-nigh fallen dead to the ground, and she replied weeping, "O my lord, what wouldst thou know more of my affairs? For doth not all the world know that I, a young damsel, being married to King Rodrigo, was with him Lady of Spain and dwelt in honour and in all pleasure, more than I deserved; and therefore it was God's will that they should endure no longer. And now I am in dishonour greater than ever was dame of such high estate; for I am plundered and have not a single handsbreadth of inheritance; and I am a captive and brought into bondage, I who was once mistress of all the land which I behold. Therefore, Sir, have pity upon my misfortunes; and in respect of the great lineage which thou knowest to be mine, suffer not that any wrong or violence be offered me by any one." He said to her, "So long as I live you shall never go from my house." She answered, "In an evil day was I born if it is to be true that I have been wife of the honoured King of Spain and now have to live as a slave in a stranger's house."

THURSDAY, February 12, 1885. 1—4 P.M.

HITOPADEÇA. I. AND III.

I. TRANSLATE with notes :

(a) मम चैतावांस् लोभविरही येन स्वहस्तगतम् अपि सुवर्णकङ्कणं यस्मै कस्मैचिद् दातुम् इच्छामि । तथापि व्याघ्रो मानुषं खादतीति लोकप्रवादो दुर्निवार एव ।

यतः । गतानुगतिकी लोकः कुट्टनीम् उपदेशिनीम् ।
प्रमाणयति नो धर्मे यथा गोघ्नम् अपि द्विजम् ॥
मया च धर्मशास्त्राण्यधीतानि । शृणु ।

मरुस्त्रिधा यथा दृष्टिः क्षुधार्तिं भोजनं तथा ।
दरिद्रे दीयते दानं सफलं पाण्डुनन्दन ॥
प्राणा यथात्मनो ऽभीष्टा भूतानाम् अपि ते तथा ।
आत्मीयस्येन भूतेषु दयां कुर्वन्ति साधवः ॥

(b) राजाह । कः प्रयातु दैत्येन खत एवम्भूतो दूतः कार्यः ।

भक्ती गुणी शुचिर्दक्षः प्रगल्भो ऽव्यसनी क्षमी ।
ब्राह्मणः परमर्मज्ञो दूतः स्यात् प्रतिभानवान् ॥

शृणो वदति । सन्धेवम्भता बहवः । किन्तु ब्राह्मण एव दूतः कर्तव्यः ।

यतः । प्रसादः कुरुते पत्युः सम्पत्तिं नाभिजाततां ।

कालिमा कालकूटस्य नापैतीश्वरसङ्गमात् ॥

राजाह । ततः शुक्र एव ब्रजतु । शुक्र त्वमेवानेन सह तत्र गत्वा अस्मदभिलषितं ब्रूहि । शुक्रो ऽवदत् । यथाज्ञापयति देवः । किन्त्वयं दुर्जनो वक्रः । दुर्जनेन सह न ब्रजामि ।

तथा शुकम् । खलः करोति दुष्टं नूनं फलति साधुषु ।

दशाननी हरेत् सीतां बन्धनं स्वान्महीदधेः ॥

II. Translate and explain :

- (a) martavyam iti yad duḥkham puruṣasyopajāyate |
çakyas tenânumānena paro 'pi parirakshitum ||
- (b) atyantavimukhe daive vyarthayatne ca paurushe |
manasvino daridrasya vanād anyat kutaḥ sukham ||
anyac ca |
manasvi mriyate kāmam kārpanyam na tu gacchati |
api nirvāṇam āyāti nānalo yāti çitatām ||
- (c) sarvāḥ sampattayas tasya samtusṭam yasya mānasam |
upānadgūḍhapādasya nanu carnavrateva bhūḥ ||

Explain the formation of the third and fourth syllables of upānadgūḍha-

- (d) prajāṃ samrakshati nrpaḥ sâ vardhayati pārthivam |
vardhanād rakṣaṇam çreyas tadabhāve sad apy asat ||

VIKRAMORVAÇIYAM.

I. Translate with notes :

- (a) राजा । तेन हि विमुच्यतां विषादः । यतिश्चै वः सखीप्रत्यानयनाय ।
रम्भा । सरिसं खु सीमादो एकन्दरस्तु ।
राजा । क पुनर्मा भवत्यः प्रतिपालयिष्यन्ति ।
सर्वाः । इमस्मिन् हिमकूडसिहरे ।
राजा । सूत ऐशानीं दिशं प्रति चीदयाश्रानाशुगमनाय ।
सूतः । यदाज्ञापयत्यायुष्मान् ।
राजा । साधु साधु । अनेन रथवेगेन पूर्वप्रस्थितं वैमतेयमप्यासा दयेयं किं पुनस्तमप-

कारिणं मघोनः । तथा हि

अग्रे यान्ति रथस्य रेणुवदमी चूर्णीभवन्ती घनाश्
चक्रभ्रान्तिररान्तरेषु जनयत्यन्यामिवारावलिम् ।
चित्रन्यस्तमिवाचलं हयशिरस्यायामवचामरं
यज्ये च समं स्थितो ध्वजपटः प्रान्ते च वेगानिलात् ॥

- (b) चित्र । सहि विसम्भा होहि । पराभूदो खु तिदसपरिपन्थिनी हदासा ।
उर्वशी । किं पहावदंसिणा महिन्देण ।

[प्रभावं माहात्म्यं दर्शयति स तथोक्तः Kāṭavema].

- (c) कंचुकी । सर्वः कस्ये वयसि यतते भीक्षुमर्धान्कुटुम्बी
पश्चात्पुत्रैरपहतभरः कल्पते विश्रमाय ।
अस्माकं तु प्रतिदिनमिधं सादयन्ती शरीरं
सेवा कारापारिणतिरही स्त्रीषु कष्टोधिकारः ॥

आदिष्टोस्मि सनियमया काशिराजपुत्र्या व्रतसंपादनार्थं मया मानमुत्सृज्य
निपुणिकामुखेन पूर्वं याचिती महाराजः । तदेव मदचनादिज्ञापयेति । यावदिदा-
नीमवसितसंध्याजायं महाराजं पश्यामि । रमणीयः खलु दिवसावसानवृत्तान्ती
राजविश्रान्ति । इह हि

उत्कीर्णा इव वासयष्टिषु निशानिद्रालसा वरिष्णी
धूपैर्जालविनिःसृतैर्वडभयः संदिग्धपारावताः ।
आचारप्रयतः सपुष्पबलिषु स्नानेषु चार्चिभ्रतीः
संध्यामङ्गलदीपिका विभजते शुङ्खान्तवृद्धाजनः ॥

- (d) विदू० । किं वा सगी सुमरिदम् । ए वा अण्हीअदि ए वा पीअदि ।
केवलं अणिमिसेहिं एअणेहिं मीणा विडम्बीअन्दि ।

राजा । भद्रे

अनिर्देशसुखः स्वर्गः कसं विस्मारयिष्यति ।
अनन्यनारीसामान्यी दासस्वस्थाः पुरुरवाः ॥

- (e) भी भी जलविहंगमराज

पश्चात्सरः प्रति गमिष्यसि मानसं तत्
पाथेयमुत्सृज्य विसं ग्रहणाय भयः ।
मां तावदुद्धर शुची दयिताप्रवृत्त्या
स्वार्थात्सतां गुह्यतरा प्रणयिक्रियैव ॥
मानसीत्सुकेन मया न ललितेत्येवं वचनमाह ।
यदि हंस गता न ते नतभूः
सरसी रोधसि दर्शनं प्रिया मे ।
मदखेलपदं कथं नु तस्याः
सकलं चीर गतं तथा गृहीतम् ॥

अतश्च

हंस प्रयच्छ मे कान्तां गतिरस्वास्वया हता ।
विभावितैकदेशेन देयं यदभियुज्यते ॥
एष चीरानुशासी राजेति भयादुत्पतितः ।

2. Shew the formation of the following Prakrit words:

gacchadi—hiaam—itthiā—siviniām—kīlissam—oāse—genhia—kahehi.

3. Give a note on the relation of the Sanskrit drama to the Greek and the Buddhist elements in Indian history.

RAMAYANA II.

Translate with notes:

तं समीक्ष्य व्यवसितं पितुर्निर्देशपालने ।
कौशल्या वाष्पसंरुद्धा वशी धर्मिष्ठमब्रवीत् ॥
अदृष्टदुःखी धर्मात्मा सर्वभूतप्रियंवदः ।
मयि जातो दशरथात् कथमुक्तेन वर्तयेत् ॥
यस्य भृत्याश्च दासाश्च मृष्टान्यस्त्रानि भुञ्जते ।
कथं स भीक्ष्यते रामो वने मूलफलान्ययं ॥
कः अहध्यादिदं श्रुत्वा कस्य वा न भवेद्भयं ।
गुणवान् दयितो राज्ञा राघवो यद्विवाह्यते ॥
नूनं तु बलवाँल्लोके ह्यतान्तः सर्वमादिशेत् ।
लोके रामाभिरामस्त्वं वनं यत्र गमिष्यसि ॥
अयं हि मामात्मभवस्तवाददर्शनमारुतः ।
विलापदुःखसमिधो रुदिताश्रुज्जताज्जतिः ॥
चिन्तावाप्यमहाधूमस्तवाददर्शनचित्तजः ।
कर्षयित्वा मृगं पुत्र निःश्लाघायाससंभवः ॥
तथा विहीनामिह मां शोकाग्निरतुली महान् ।
प्रधक्ष्यति यथा कचं चित्रभानुर्हिमात्यये ॥
यथा हि धेनुः स्वं वत्सं गच्छन्तमनुगच्छति ।
अहं त्वानुगमिष्यामि यत्र वत्स गमिष्यसि ॥

FRIDAY, February 13, 1885. 9—12 A.M.

TRANSLATE, adding short notes on any difficult expressions:

I.

अथासी नगरदेवतेव नगरमोषरोषिता निःसंवाधवेलायां निःसृता संनिहृष्टा काचिदुन्मिषद्भूषणा युवतिराविरासीत् । कासि वासु क यासीति सदयमुक्ता चासगद्गदमगादीत् । आर्यं पुर्यामस्थामर्यवर्यः कुवेरदत्तनामा प्रतिवसति । अस्यहं तस्य कन्या । मां जातमात्रां धनमित्रनाम्ने ऽचत्वार्यैव कस्मैचिदिभ्यकुमारायान्वजानाङ्गार्या मे पिता । स पुनरस्मिन्नत्युदारतया पित्रीरन्ते वित्तेर्निजैः क्रीतैर्वार्थिवर्गाहारिभ्यं दरिद्रति सत्ययोदारक इति प्रीतलोकाधिरोपितापरस्त्राघ्यनामनि वरयत्येव तस्मिन्मां तरुणीभूतामधन इत्यदत्तार्थपतिनाम्ने कस्मैचिदितरस्मै यथार्थनाम्ने सार्थवाहाय दित्सति मे पिता । तदमङ्गलमद्य किल प्रभाते भावीति ज्ञात्वा प्रागेव प्रियतमदत्तसंकेता वञ्चितस्वजना निर्गत्य बाह्याभ्यक्षेन वर्त्मना मन्मथाभिसरा तदागारमभिसरामि । तस्मां मुञ्च गृहाणेतद्गाण्डमित्युक्त्वा मन्मथमर्पितवती ।

Daçakumâracarita.

II.

अब्राह्मणादध्ययनमापत्काले विधीयते ।

अनुब्रज्या च शुश्रूषा यावदध्ययनं गुरोः ॥

अब्राह्मणादिति । अब्राह्मणादन्यो यो दिजः क्षत्रियस्तदभावे वैश्यो वा तस्मादध्ययनमापत्काले अब्राह्मणाध्यापकासंभवे ब्रह्मचारिणी विधीयते । अनुब्रज्यादिरूपा गुरोः शुश्रूषा यावदध्ययनं तावत्कार्या गुरुत्वेन पादप्रक्षालनाच्छिष्टप्रोञ्जनादिरूपा शुश्रूषा प्रसक्ता सा न कार्या तदर्थमनुब्रज्या चेति विशेषितम् । गुरुत्वमपि यावदध्ययनमेव क्षत्रियस्याह व्यासः । मन्त्रदः क्षत्रियो विप्रैः शुश्रूष्यो ऽनुगमादिना ।

प्राप्तविधौ अब्राह्मणस्तु पुनस्तस्य गुरुः स्मृतः ॥ २४१ ॥

नाब्राह्मणे गुरी शिष्यो वासमात्यन्तिकं वसेत् ।

ब्राह्मणे चाननूचाने काङ्क्षन् गतिमनुत्तमाम् ॥

ब्राह्मचारित्वेन नैष्ठिकस्यापि अब्राह्मणादध्ययनं प्रसक्तं प्रतिषेधयति नाब्राह्मण इति ।
आत्यन्तिकं वासं यावज्जीविकं ब्राह्मण्यर्थं क्षत्रियादिके गुरी ब्राह्मणे साङ्गवेदानध्येतरि
अनुत्तमां गतिं मोक्षलक्षणमिच्छन् शिष्यो नानुतिष्ठेत् ॥ २४२ ॥

Manu, II. 241, 42.

यथेरिषे वीजमुष्मा न वप्ता लभते फलम् ।

तथानृचे हविर्दत्त्वा न दाता लभते फलम् ॥

दाहन्प्रतिग्रहीदंश्च कुरुते फलभागिनः ।

विदुषे दक्षिणान्दत्त्वा विधिवन्नेत्य चेह च ॥ III. 142, 43.

III.

अस्याज्ञानस्वावरणविशेषनामकं शक्तिद्वयमस्ति । आवरणशक्तिस्त्वावत् । अक्षी ऽपि
मेघो ऽनेकयीजनायतमादित्यमण्डलमवलीकयित्वनयनपथपिधायकतया यथाच्छादय-
तीव तथाज्ञानं परिच्छिन्नमप्यात्मानमपरिच्छिन्नमसंसारिणमवलीकयित्वबुद्धिपिधाय-
कतयाच्छादयतीव । तादृशं सामर्थ्यम् । तदुक्तम् ।

घनच्छन्नदृष्टिर्घनच्छन्नमर्कं यथा निघ्नमं मन्यते चातिमूढः ।

तथा बद्धवद्भाति यो मूढदृष्टेः स नित्योपलब्धिस्वरूपो ऽहमात्मा ॥

इत्यादि । अनयावृतस्यात्मनः कर्तृत्वभोक्तृत्वसुखितदुःखित्वादिसंसारसंभावनापि संभवति
यथा स्वाज्ञानावृतायां रज्ज्वां सर्पत्वसंभावना । विशेषशक्तिस्तु । यथा रज्ज्वज्ञानं
स्वाद्यतरज्जौ स्वशक्त्या सर्पादिकमुद्गावयति एवमज्ञानमपि स्वाद्यतात्मनि स्वशक्त्या-
काशादिप्रपञ्चमुद्गावयति । तादृशं सामर्थ्यम् ।

Vedāntasāra.

IV. a.

वै॒श्वान॑रं* मन॒साग्निं॑ नि॒षाय्या॑† ह॒वि॒मन्तो॑ अ॒नु॒ष॒त्यं स्व॑र्वि॒दम् ।
 सु॒दानं॑ दे॒वं र॒थिरं॑ व॒सू॒य॒वो गी॒र्भी र॒खं कु॒शिका॑सो ह॒वामहे॑ ॥ १ ॥
 तं शु॒भ्रम॒ग्निम॑वसे ह॒वामहे॑ वै॒श्वान॑रं ‡ मा॒तरि॒श्वान॑मु॒क्थ्यम् ।
 दृ॒ष्ट॒स्य॒तिं म॑नु॒षी दे॒वता॑तये वि॒प्रं श्री॑ता॒र॒म॒तिथिं॑ र॒घु॒व्य॒दम् ॥ २ ॥
 अ॒ग्नी न क्र॑न्द॒ञ्च॒निभिः॑§ समि॒ध्यते॑ वै॒श्वान॑रः कु॒शिके॑भि॒र्युगे॑युगे ॥
 स नी॑ अ॒ग्निः सु॒वीर्यं॑ स्व॒य्यं॑॥ द॒धातु॑ र॒त्नम॑मृतेषु जा॒य॒तिः ॥ ३ ॥
 प्र य॑न्तु वा॒जा॒स्त॒विषी॑भि॒र॒ग्नयः॑ शु॒भे संमि॑श्राः ** पृ॒षती॑रयु॒चत ।
 दृ॒ष्ट॒दु॒षी म॑रुतो वि॒श्ववे॑दसः प्र वे॒प॒यन्ति॑ पर्व॒ताँ अ॒दा॒भ्याः ॥ ४ ॥
 अ॒ग्नि॒भि॒यो॑†† म॑रुतो वि॒श्व॒हृ॒द्य आ॒ त्विष॑मु॒यम॑व ई॒महे॑ व॒यम् ।
 ते स्वा॒मिनी॑ रु॒द्रिया॑ वर्ष॒निर्णि॑जः सिं॒हा न ह्ये॑ष॒क॒तवः॑ सु॒दान॑वः ॥ ५ ॥

Rig V. iii. 2. 14.

* Viçve narâ agnipranayanâdikriyâyâ netâro yasyeti viçvânaro 'gniḥ, tasya sambandhi vaiçvânarah, apatyam iti yâvat | yadvâ viçvânara eva vaiçvânarah, taddhito 'nanyârtho rākshasavâyasâdivat. S. Explain this.

† Nicāyya Pada. Nicāyya antahkaranenaivaṁvidhagunaṇiṣṭhas tvam iti jñātvā. S. Translate this and discuss the word nicāyya.

‡ Explain mātariçvan. Sāyana says, mātary antarikshe çvasiti vidyudâdirûpatayâ ceshtate; explain and criticise this.

§ Yathâ jāto 'çvaḥ krandan heshāravaṁ kurvan janibhir janayitribhir vaḍavâbhiḥ stanyapradānena pratidinam samyak poshyate tadvat. S. Give another explanation of jānibhiḥ.

|| Explain the form yugēyuge, and give other similar instances. Translate, parasyām-redītatvād anudāttatve pūrvapada prakṛitisvarah.

¶ Discuss the form svāçvyam.

** Discuss the meaning of prīshatīḥ. Translate Sāyana's remark on i. 64. 8; prīshatyah çvetavindvaṅkitâ mṛigya ity aitiḥāsikāḥ, nānāvarṇā meghamālâ iti nairuktāḥ.

†† Agniçriyo vaidyutam agniṁ çrayantaḥ, viçvasya vṛikshâdeḥ kṛiṣṭir âkarṣhaṇam namanonnamanâdilakṣhaṇam karma yebhyo bhavati te viçvakṛiṣṭayah. S. Explain this and give other meanings for the two words.

b.

Translate :

धेनुः प्र॒त्नस्य॑ का॒म्यं दु॒हान्तः॑ पु॒च॒रति॑ दक्षि॒णायाः* ।

आ द्यो॒तनिं॑ वहति॒ शु॒भ्रया॑मी॒षसः॑ स्तो॒मो अ॒श्विना॑वजी॒गः ॥ १ ॥

सु॒यु॒म्ब॒हन्ति॑ प्र॒ति वा॒मृते॑नी॒र्ध्वा भ॑वन्ति पि॒तरे॑व मे॒धाः† ।

जरे॑याम॒स्रदि॑ प॒णैर्म॑नी॒षा यु॒वोर॑व॒स्रमा॑ या॒तम॑र्वाक् ॥ २ ॥

सु॒यु॒ग्मि॒रश्वैः॑ सु॒वृता॑ रथे॒न ‡द॒क्षा॒विमं॑ शृ॒णुतं॑ स्त्री॒कम॑द्रेः ।

कि॒मङ्ग॑ वां प्र॒त्यव॑र्ति॒ गमि॑ष्ठा॒ङ्गवि॑प्रा॒प्तौ अ॒श्विना॑ पु॒राजाः॑ ॥ ३ ॥

Rig V. iii. 5. 5.

* Translate the following comment of Sāyana and state where you consider it faulty ;
dhenuḥ priṇayitry ushâḥ pratnasya purâtanasyâgneḥ kâmyam kamanīyam payo duhânâ
dogdhri bhavati; dakshinâyâ ushasaḥ putraḥ sūryas tasyâ antaḥ carati; ushaso 'nantaram
çubhrayâmâ, sūryakīraṇasamparkâc chubhratayâ gamanam yasyâsau çubhrayâmâ divasaḥ,
dyotaniṃ sarvasya prakâçakam sūryam āvahati.

Explain the different meanings of *dākshinā*.

† Distinguish the meanings of *médha* and *medhā*. What etymologies have been suggested for them?

‡ Give the etymology of *dasrā* and *āvartī*. Explain Sāyana's interpretation of *dasrāu* as *çatrûnām upakshapayitārau*.

FRIDAY, February 18, 1885. 1—4 P.M.

TRANSLATE:

I.

तमागतमभिप्रेक्ष्य वशिष्ठः श्रेष्ठभार्युषिः ।
 विश्वामित्रं नरश्रेष्ठं प्रतिजघाह पूजया ॥
 पादार्थाक्षमनीयैश्च स्वागतेन च भारत ।
 तथैव परिजघाह बन्धेन हविषा तथा ॥
 तस्याय कामधुग्धेनर्वशिष्ठस्य महात्मनः ।
 उक्ता कामान् प्रयच्छेति सा कामान् दुहते सदा ॥
 घान्धारण्याक्षीषधीश्च दुदुहे पय एव च ।
 षड्रसश्चाभूतनिभं रसायेनमनुत्तमम् ॥
 भोजनीयानि पेयानि भक्ष्याणि विविधानि च ।
 शिञ्जान्यमृतकल्याणि शोष्याणि च तथार्जुन ।
 रत्नानि च महार्हाणि वासांसि विविधानि च ॥
 तैः कामैः सर्वसंपूर्णैः पूजितश्च महीपतिः ।
 सामात्यः सबलश्चैव तृतीय स भूशं तदा ॥
 षडुन्नतां सुपार्श्वीं पृथुपञ्चसमावृताम् ।
 मण्डकनेत्रां स्वाकारां पीनीधसमनिन्दिताम् ॥
 सुबालधिं शकुकर्णं चारुशृङ्गीं मनीरमाम् ।
 पुष्टायतशिरीषीवां विस्मितः सोऽभिवीक्ष्य ताम् ॥
 अभिनन्द्य स तां राजन् नन्दिनीं गाधिनन्दनः ।
 अब्रवीच्च भूशं तुष्टः स राजा तमृषिं तदा ॥
 अर्बुदेन गवां ब्रह्मन्मम राज्येन वा पुनः ।
 नन्दिनीं संप्रयच्छस्व भुञ्ज्य राज्यं महामुने ॥

Mahābhārata.

.II.

नमी विश्वसृजे पूर्वं विश्वं तदनु विश्रुते ।
 अथ विश्वस्य संहर्षे तुभ्यं वेधा स्वितात्मने ॥
 रसान्तराख्येकरसं यथा दिव्यं यथो ऽनुष्ठे ।
 देशे देशे गुणेष्वेवमवस्थास्त्वमविक्रियः ॥
 अमेयी मितलीकस्त्वमनर्थी प्रार्थनावहः ।
 अजितो जिष्णुरत्यन्तमथक्ती व्यक्तकारणम् ॥
 अभ्यासनिवृत्तीतेन मनसा हृदयाश्रयम् ।
 ज्योतिर्मयं विश्विन्वन्ति योगिनस्त्वां विमुक्तये ॥
 ब्रह्मधायागमैर्मिमाः पन्थानः सिद्धिहेतवः ।
 तथैव निपतन्धीषा ज्ञान्वीया इवार्णवे ॥
 महिमानं यदुत्कीर्णं तव संप्रियते वचः ।
 अमेण तदशक्ता वा न गुणानामियत्तया ॥

Raghuvamśa X.

III.

एकस्मिन् जीर्णकीटरे जायया सह निवसतः पश्चिमे वयसि वर्तमानस्य
 कथमपि पितुरहमेवैको विधिवशात्सूनुरभवम् । अतिप्रव्रलया चाभिभूता ममैव
 जायमानस्य प्रसववेदनया जननी मे लोकान्तरमगमत् । अभिमतजायाविनाशशोक-
 दुःखितो ऽपि खलु तातः सुतस्तेहादन्तर्निवृत्त्या पटुप्रसरमपि शोकमेकाकी मत्संव-
 र्धनपर एवाभवत् । अतिपरिणतवयाश्च कुशचीरानुकारिणीमास्यावशिष्टजीर्णपि¹ञ्ज-
 लजर्जरामवस्त्रांसदेशशिथिलामपगतोत्पतनसंस्कारां पचसंततिमुदहन्नुपाकूटकम्यतया
 च संतापकारिणीमङ्गलयां जरामिव विधुन्वन्नकठोरशेफालिकाकुसुमनालपिञ्जरेण
 कलममञ्जरीदलनमसृष्टिन्तचीणीपान्थलेखिन स्फुटितायकीटिना चक्षुपुटेन परनीडनि-
 पतिताभ्यः शालिवल्लीभीक्ष्णुलक्षणनादायादाय तन्मूलनिपतितानि शुक्कुला-
 वदलितानि फलशकलानि समाहृत्य परिभ्रमितुमशक्ती मङ्गमदात् । प्रतिदिवसमा-
 त्मना च मदुपभुक्तशेषमकरीदशनम् ॥

Kādambarī.

¹ tail.² smoothened.

IV.

अणीरणीयान् महती महीयानात्मा गुहायां निहितो ऽस्य जन्तोः ।

तमक्रतुं पश्यति वीतशीकी धातुः प्रसादान्महिमानमीशम् ॥

अणीः सूक्ष्मादप्यणीयानणुतरः । महती महत्त्वपरिमाणान्महीयान् महत्तरः । स चात्मास्य जन्तोर्ब्रह्मादिस्त्वम्पर्यन्तस्य प्राणिजातस्य । गुहायां हृदये निहित आत्मभूतः स्थित इत्यर्थः । तमात्मानमक्रतुं विषयभोगसङ्कल्परहितमात्मनो महिमानं कर्मनिमित्तवृद्धिचयरहितमीशं पश्यत्ययमहमस्मीति साक्षाज्जानाति यः स वीतशीकी भवति । केन तर्ह्यसौ पश्यति । धातुरीश्वरस्य प्रसादात् । प्रसन्ने हि परमेश्वरे तद्याथात्म्यज्ञानमुत्पद्यते । अथवेन्द्रियाणि धातवः शरीरस्य धारणात्तेषां प्रसादाद्विषयदोषबलाद्यपनयनात् । अन्यथा दुर्विज्ञेय आत्मा कामिभिः प्राकृतपुरुषैः ॥

Çvetâçvatara-Upanishad with Çankara's Comm.

SATURDAY, February 14, 1885. 9—12 A. M.

1. TRANSLATE and explain the following passages from the Siddhânta-kaumudî (the kâraka-section).

a. उपान्वधाङ्गवसः । १ । ४ । ४८ ।

उपादिपूर्वस्य वसतेराधारः कर्म स्यात् । उपवसति अनुवसति अधिवसति आव-
सति वा वैकुण्ठं हरिः । अभुक्ष्यर्थस्य न * । वने उपवसति ॥ उभसर्वतसीः कार्या
धिक्यपर्यादिषु त्रिषु । द्वितीयाद्धेडितान्तेषु ततोऽन्यत्रापि दृश्यते ॥ उभयतः दृष्टं
गोपाः सर्वतः दृष्टम् । धिक् दृष्टाभक्तम् । उपर्युपरि लोकं हरिः । अधधि
लोकम् । अधो ऽधो लोकम् । अभितः परितः समयानिकषाहाप्रतियोगे ऽपि ।
अभितः दृष्टम् । परितः दृष्टम् । ग्रामं समया निकषा । हा दृष्टाभक्तम् तस्य
शीघ्रत इत्यर्थः । बुभुक्षितं न प्रति भाति किञ्चित् ।

Discuss the last example.

b. सहयुक्ते ऽ प्रधाने । २ । ३ । १६ ।

सहार्थेन युक्ते ऽ प्रधाने द्वितीया स्यात् । पुत्रेण सहागतः पिता । एवं साकं सार्धस-
मंयोगे ऽपि । विनापि तद्योगं द्वितीया 'दृष्टी यूना' इत्यादिदर्शनात् ।

Explain the following note: pitur atra kriyâsambandhaḥ sâkshâc chabdenocyate,
putrasya tu pratiyamâna iti putrasyâprâdhânyam.

c. अन्तर्धीं येनादर्शनमिच्छति । १ । ४ । २८ ।

व्यवधाने सति यत्कर्तव्यस्यात्मनो दर्शनस्याभावमिच्छति तदपादानं स्यात् । मा-
तुर्निलीयते दृष्टः । अन्तर्धीं किम् । सौरात्र दिदृक्षते । इच्छति यद्वहं किम् ।
अदर्शनेच्छायां सत्यां सत्यपि दर्शने यथा स्यात् । देवदत्तात् यज्ञदत्तो निलीयते ।

2. Explain the following verse from the Kumârasambhava (where Menâ wishes
to hinder her daughter Umâ), and Mallinâtha's commentary on the last word.

निशम्य चैनां तपसे हृतीद्यमां
सुतां गिरीशप्रतिसक्तमानसाम् ।
उवाच मेना परिरम्भ वक्षसा
निवारयन्ती महतो मुनिव्रतात् ॥

मुनिव्रतादित्यत्र यद्यपि मुनिव्रतस्य मेनकाया अनीक्षितत्वात् 'वारणार्थानामीक्षितः' इति (१।४।२७) नापादानत्वं तथापि ह्यतीक्ष्णमिति मानसप्रवेशोक्तत्वात् 'ध्रुवमपाये ऽपादानम्' इति (१।४।२४) अपादानत्वं स्यात् । यथाह भाष्यकारः 'यच्च मिथ्या संप्राप्य निवर्तते तद् ध्रुवमपाये ऽपादानमिति प्रसिद्धम्' ।

3. Give the principal rules for the changes of final **ह्** before terminations, with examples.

4. Give the ablative and locative singular of **गो**. What is the difference of meaning between **पञ्चगुः** and **पञ्चगवम्**?

5. Give the nominative singular and locative plural of **अन्वश्** (masculine and feminine), and **गिर्**.

6. Write out the singular of the present and imperfect parasmaipada of **हृद्** (2); what other roots resemble it?

7. Give the first person plural of the reduplicated perfect parasmaipada of **व्यध्**, **क्री**, and **हव्**.

8. Give the third person, singular and dual, of the aorist parasmaipada of **हृज्**, **दुह्** and **अश्** (4).

9. Give instances where the terminations of certain words are changed at the end of tatpurusha or karmadhāraya compounds. Can you suggest any reason for it?

10. Explain and give instances of the weakening effect which a root undergoes before the participial affix **न्**.

11. Give the third person singular of the present parasmaipada of the desiderative of **जि**, **हव्** and **यह्**.

12. What is the force of a double negative (**न न**) in Sanskrit? Explain the following description of a good style, with the annexed commentary;

स्फुटता न पदैरपाकृता

न च न स्वीकृतमर्थगीरवम् ।

न च न स्वीकृतं, स्वीकृतमेवेत्यर्थः । वैशद्यप्रसक्तार्थगीरवाभावनिवर्तनाय नञ्द्वयं, 'संभाव्यनिषेधनिवर्तने द्वौ प्रतिषेधाविति' वामनः । (*Kirātārj.* ii. 27).

THURSDAY, February 19, 1885. 9—12 A.M.

COMPARATIVE GRAMMAR.

1. STATE and briefly discuss the theories bearing on the nature of the relationship existing between the various groups of Indo-german languages.

How far and by what characteristics can the Asiatic groups be separated from the European? How does Armenian stand in this respect?

2. "I do not believe that in the language of the Brahmins when it was a vernacular tongue the *akāra* had always the power of a short *a*, and that the sounds of *e* and *o* never occurred in it." Bopp (in 1820).

How has this question been revived and with what results?

3. Shew how the Sanskrit grammarians' view of *Guṇa* must be modified to meet the most recent opinions on the original Aryan vocalism.

Discuss the history of the radical vowel in the words *gata*, *kṛta*, *hita*, *sthita*, *pūrṇa*, comparing the cognate words in the European languages.

4. Explain how the processes known as Palatalisation, Dentalisation, Labialisation arose. Mark the extent to which they may be traced in Sanskrit, Greek and Latin.

Clearly explain the double nature of the Sanskrit *j*.

5. Give a general sketch of the system of Sanskrit accentuation. Apply considerations of accent to the explanation of (a) the cases from noun stems in *-tr*, (b) the paradigm of the present indic. of Third Class Verbs, (c) the peculiarities of Sixth Class Verbs.

6. Give some account of the Aśoka inscriptions. Apply this and any other evidence to the question of the rise of the Prakrits.

State the chief general tendencies shown by the Prakrits, and give illustrations from the Romance languages.

7. What differences can you point out between the Causative and Denominative Secondary Conjugations?

To what extent are these Conjugations traceable in Greek and Latin?

8. Write a short history of the Locative case singular and plural in Sanskrit, Prakrit, Greek and Latin.

9. What are the usages of the original suffixes *as*, *ti*, *ka*, *vant*? Give instances from different languages.

10. Fully explain the radical and formative parts of the words *avyayībhāva*, *satītā*, *gaccheyam*, *pipāsu*, *prthivīrāja*, *taddhita*, *sāvitṛi*, *πέονσα*, *ποῦ*, *ἐρχη*, *vetustior*.

THURSDAY, *February 19, 1885.* 1—4 P.M.

1. DEFINE the term *Upanishad*, describe the general character of the treatises which bear that name, and enumerate the oldest and most authoritative of them.
 2. Give an account of the class of writings called *Prâtīkākhyasūtras*.
 3. Explain the term *Mīmāṃsā*, and give an outline of the leading tenets of the *darṣana* of that name. Give the names of its two chief expounders.
 4. Give an example of a complete syllogism according to the *Nyāya*. Define the terms *anumāna*, *upamāna*, and *parāmarṣa*.
 5. Who was *Bāṇa*, and when did he live? Enumerate his works, and give an account of any one of them.
 6. Specify the current *Hindu eras*, and shew how to find for any given year in any of them the corresponding year of our era.
 7. What is understood by the term *Hindī*? Define the limits within which the language is spoken, and specify its principal dialects. On what grounds can it lay special claim to be studied by philologists?
 8. Trace, and account for, the prevalence of *Çivaism* in the classical literature of India.
 9. Mention the earliest known text-book on *Alankāra*. Give the names of some other standard works on this science.
- What makes these manuals specially valuable and interesting?
-

LIGHTFOOT SCHOLARSHIPS.

APRIL 28, 1885. 9.30—12.30.

I.

1. WHAT do you consider the principal causes of Gnosticism? Give its principal characteristics. In what way do you consider the Gnostic heresies to have influenced Christian theology?

2. Describe the organization of the Roman Empire at the accession of Diocletian, and his attempt to remodel it. Give an account of his proceedings towards the Christian Church, and their ultimate result.

3. What steps were taken to determine the relations of the Church to the civil power in the time of Constantine, Theodosius I., Gratian, and Justinian I.?

4. What is Monophysitism? Describe the struggle which arose about the Monophysite doctrines, the attempts made to put an end to it, and the formation of Monophysite churches.

5. Give a short account of the opinions of Aetius, Jovinian, and Vigilantius, and of their several opponents.

6. Point out any circumstances which favoured the spread of Mohammedanism in the seventh century.

7. Trace the steps by which the See of Rome made itself independent of Constantinople and Ravenna.

8. Give a brief account of the rise of Western Monachism, including short sketches of the lives of Martin of Tours and Benedict of Nursia. What were the relations of the monasteries to the bishops and the secular clergy generally?

9. Describe the rise and progress of the Iconoclastic movement up to, and including, the Second Council of Nicæa. What was the effect of this movement in the West?

10. Give some account of St Columba, and of the labours of Irish missionaries on the Continent.

11. Describe the difference produced by the Teutonic conquest of Western Europe in the relation of the State to (1) the Pope, (2) the Bishops and their clergy.

12. Describe the relations of Charles the Great to Hadrian I., and Leo III., and their consequences.

APRIL 28, 1885. 1.30—4.30.

II.

1. DESCRIBE the work of Alfred the Great and of St Dunstan in organizing the kingdom and Church of England.
 2. Give some account of Joannes Scotus Erigena, and of the School of the Palace in Paris in his time.
 3. Sketch briefly the history of the Papacy from Sergius III. to John XII.
 4. What was the prevalent conception of the functions of the Church and the Empire before the time of Otto the Great? How far was this changed by Otto?
 5. Describe the work of Hildebrand as a statesman and ecclesiastical leader before his accession to the Papacy.
 6. What were the conditions of the Concordat of Worms, and what the circumstances which led to it?
 7. Give a brief account of the life and character of Thomas Becket, describing clearly his quarrel with the king. What do you consider to have been the permanent effects of his resistance?
 8. Describe the policy of Frederick Barbarossa with regard to ecclesiastical affairs.
 9. Give a general description of the organisation of the Church of the West in the 12th century, and especially of the rise of Diocesan Synods and of Lay Patronage.
 10. What were the moral and social causes of the Crusades, and what were their principal effects upon the political and ecclesiastical condition of Europe?
 11. Into what classes was mediæval society divided? What attempts were made in different countries to organise them into one body?
 12. What was the general policy of Innocent III.? Illustrate this by an account of his proceedings in England in the time of King John.
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APRIL 29, 1885. 9.30 A.M.—12.30 P.M.

III.

1. ESTIMATE the resources of the two Parties in the quarrel between John XXII and Louis of Bavaria.
2. Illustrate the characteristics of the time by the history of Rienzi.
3. What was the effect on the Church in England of the residence of the Popes at Avignon?
4. Give the limits of the obedience to the two Popes respectively at the Great Schism, and the reasons which determined them.
5. How far did the Concordats made after the Council of Constance satisfy the desires of the promoters of the Council?
6. Compare the Council of Basel with those of Constance and Pisa, and point out the causes of its weakness.
7. Give a concise sketch of the Hussite war, illustrating its cruelty, its national character, and its conclusion.
8. What do you mean by the Gallican Church? What were its main positions, and by what acts were its liberties secured or modified?
9. Explain the causes which forestalled in England in the fourteenth century the Reformation in Germany in the sixteenth.
10. Illustrate the relation of the Humanists to the Religious Reformers.

APRIL 29, 1885. 1.30 P.M.—4.30 P.M.

IV.

1. WHAT were the political circumstances which at the accession of Charles V. secured for Luther the friendship of Frederick of Saxony and for the Pope the friendship of the Emperor?
 2. Trace the gradual development of Luther's ideas.
 3. Give the dates and circumstances of the separation of the German States into two hostile Parties.
 4. What were the fundamental differences, exclusive of the question of the Eucharist, between the systems of Luther and Zwingli?
 5. How did the influences of the Reformation tend to weaken the constitutional development of the German Empire, and to strengthen the power of the territorial Princes?
 6. Give the limits and organisation of the Huguenot power in France at the time of its greatest prosperity.
 7. What effect had the Reformation upon the internal condition of Catholicism?
 8. Give the circumstances immediately connected with the conversion of Henry IV. of France.
 9. Discuss the assertion that the Peace of Westphalia put an end to religious wars in Europe.
 10. Illustrate from the events of his reign the attitude of Louis XIV. towards the Papacy.
 11. Give briefly the circumstances attending the suppression of the Jesuits.
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APRIL 30, 1885. 9.30 A.M.—12.30 P.M.

PORT ROYAL.

1. MARK out, giving dates, the chief epochs in the history of the foundation of Port Royal after the year 1608.
2. What are our best sources of information with regard to the Port Royalists?
3. How far was the reform of Port Royal under la Mère Angélique a part of a general movement within the limits of the Catholic Church?
4. Trace the beginning of the establishment of the Messieurs de Port Royal. Describe the establishment when at its perfection, and mention by name with a few lines of characteristic description the chief Solitaries between the years 1648 and 1660.
5. What links in any way connected Port Royal with the Fronde? Describe the condition and conduct of the country-monastery during the war.
6. How came the fate of Port Royal to be involved in the question of Jansenism?
7. What were the Five Propositions, and how did they come into existence?
8. "Lettres provinciales." Give the occasion, form and general outline of the contents of these letters, with a closer abstract of the second.
9. Compare the conduct with regard to Port Royal of the three Archbishops of Paris succeeding De Retz.
10. Exclusive of Pascal's works, what are the chief literary monuments left by the Port Royalists, and what is their value?
11. What were the "Journée du guichet," "the Peace of the Church," the "Subjicimus," and the Bull "*vineam Domini*"?
12. Describe the schools of Port Royal, and shew the debt which the cause of education owes to them.

APRIL 30, 1885. 1.30—4.30.

RELIGIOUS REVIVALS OF THE 12TH AND 13TH CENTURIES.

1. POINT out how the rise of Free Cities in Lombardy favoured attempts to reform the corruptions of the Papacy.
2. "Arnaldum loquor de Brixia, qui utinam tam sanæ esset doctrinae quam districtæ est vitæ...Homo est neque manducans neque bibens...Ipsam in qua natus est valde atrociter commovit terram et conturbavit eam, unde et accusatus apud Dominum Papam schismate pessimo natali solo pulsus est, etiam et abjurare compulsus reversionem, nisi ad ipsius Apostolici permissionem. Pro simili deinde causâ et a regno Francorum exturbatus est schismaticus insignia. Execratus quippe a Petro Apostolo adhaeserat Petro Abailardo."

BERNARDI *Epist.* 195, *Ad Episc. Constant.*

Translate this, and point out clearly what transactions are referred to. What do you suppose Arnold's relation to Abelard to have been?

3. Give some account of the influence of Bernard of Clairvaux on his age, and especially of his attitude towards the Papacy, as manifested in his treatise *De Consideratione ad Eugenium Papam*.

4. "Hos Germania nostra Catharos appellat...Quidam dicunt illos Manichaeos, alii Cataphrygas, nonnulli Arianos; Alexander autem Papa vocat eos Paterinos."

Give some account of the people alluded to in this passage, and of the reasons for their several names. In what regions were they especially strong? Is there any trace of them in England? Under what name?

5. Describe the reformatory effort of Henry at Mans, under bishop Hildebert, in the early part of the twelfth century.

6. By what names were the "Waldenses" known in the Middle Ages? For what reasons? What do you consider to have been their origin and leading tenets?

7. Walter Map writes:—"Vidimus in concilio Romano sub Alexandro VII. celebrato Valdesios...qui librum Domino Papae praesentaverunt lingua conscriptum Gallica, in quo textus et glossa Psalterii plurimorumque legis utriusque librorum continebatur." What is alluded to in this passage?

Have any Provençal translations of Scripture into the vernacular come down to us? Mention any books written under Waldensian influence.

8. Describe briefly the Crusade against the Albigenses, especially the part taken in it by Simon de Montfort.

9. Give some account of the foundation of the Dominican order, and of its work in the South of France.

10. Write a brief account of the proceedings of the Inquisition of Toulouse in the thirteenth century.

11. What do you consider to have been the principal effects of the work of St Francis of Assisi and his Order on the religious life of the Church?

12. Pope Alexander IV. speaks of "libellus quidam qui in Evangelium aeternum seu quosdam libros Abbatis Joachim Introductorius dicebatur." What do you know of Abbot Joachim and the "Evangelium aeternum"?

MAY 1, 1885. 9.30—12.30.

SUBJECTS FOR ESSAYS.

1. MACHIAVELLI says that "as the observance of divine worship is the cause of the greatness of states, so contempt for it is the cause of their ruin." Discuss and illustrate this maxim.

2. Discuss this sentence of Montesquieu: "C'est un malheur pour la nature humaine lorsque la religion est donnée par un conquérant."

3. Persecution as a means of establishing opinion.

4. The value of Tradition.

TYRWHITT'S HEBREW SCHOLARSHIPS.

WEDNESDAY, May 13, 1885. 9—12.

1. ADD the vowel points and mark when the accent is on the penultimate syllable in the following:—

(a) כה אמרו כל עדת יהוה מה המעל הזה אשר מעלתם באלהי ישראל
לשוב היום מאחרי יהוה בבנותכם לכם מזבח למרדכם היום ביהוה : המעט לנו
את עון פעור אשר לא המהרנו ממנו עד היום הזה ויהי הנגף בעדת יהוה :
ואתם תשובו היום מאחרי יהוה והיה אתם תמרדו היום ביהוה ומחר אל כל עדת
ישראל יקצף : ואך אם טמאה ארץ אחותכם עברו לכם אל ארץ אחות יהוה
אשר שכן שם משכן יהוה והאחוזו בתוכנו וביהוה אל תמרדו ואותנו אל תמרדו
בבנותכם לכם מזבח מבלעדי מזבח יהוה אלהינו : הלוא עכן בן זרח מעל מעל
בחרם ועל כל עדת ישראל היה קצף והוא איש אחד לא גוע בעונו : ויענו
בני ראובן ובני גד וחצי שבט המנשה וידברו את ראשי אלפי ישראל : אל
אלהים יהוה אל אלהים יהוה הוא ידע וישראל הוא ידע אם במרד ואם במעל
ביהוה אל תושיענו היום הזה : לבנות לנו מזבח לשוב מאחרי יהוה ואם להעלות
עליו עולה ומנחה ואם לעשות עליו זבחי שלמים יהוה הוא יבקש : ואם לא
מראנה מדבר עשינו את זאת לאמר מחר יאמרו בניכם לבנינו לאמר מה לכם
וליהוה אלהי ישראל : וגבול נתן יהוה ביננו וביניכם בני ראובן ובני גד את הירדן
אין לכם חלק ביהוה והשביתו בניכם את בנינו לבלתי ירא את יהוה : ונאמר
נעשה נא לנו לבנות את המזבח לא לעולה ולא לזבח : כי עד הוא בינינו
וביניכם ובין דורותינו אחרינו לעבד את עבדת יהוה לפניו בעלותינו ובזבחינו
ובשלמינו ולא יאמרו בניכם מחר לבנינו אין לכם חלק ביהוה :

(b) נקבת בממיו ראש פרוז יסערו להפיצני עליצתם כמו לאכל עני במסתר :
 דרכת בים מוסיד חמר מים רבים : שמעתי ותרגו במני לקול צללו שפתי יבוא
 רקב בעצמי ותחתי ארגו אשר אנוח ליום צרה לעלות לעם יגודנו : כי תאנה
 לא תפרח ואין יכול בנפנים כחש מעשה זית ושדמות לא עשה אכל נזר ממבלה
 צאן ואין בקר ברפתים : ואני ביהוה אעלוזה אגילה באלהי ישעי : יהוה אדני
 חילי וישם רגלי כאילות ועל במותי ידרכנ למנצח בנגינותי :

2. Translate into HEBREW with vowel points:—

All night the lonely suppliant prayed,
 All night his earnest crying made;
 Till standing by his side at morn,
 The tempter said in bitter scorn:
 'Oh! peace: what profit do you gain
 From empty words and babblings vain?
 "Come, Lord—oh, come!" you cry alway;
 You pour your heart out night and day;
 Yet still no murmur of reply,—
 No voice that answers, "Here am I."
 Then sank that stricken heart in dust,
 That word had withered all its trust;
 No strength retained it now to pray,
 For faith and hope had fled away:
 And ill that mourner now had fared,
 Thus by the tempter's art ensnared,
 But that at length beside his bed
 His sorrowing Angel stood, and said,
 'Doth it repent thee of thy love,
 That never now is heard above
 Thy prayer, that now not any more
 It knocks at heav'n's gate as before?'
 —'I am cast out—I find no place,
 No hearing at the throne of grace:
 "Come, Lord—oh, come!" I cry alway.
 I pour my heart out night and day,
 Yet never, never have I won
 The answer,—"Here am I my son."
 —'Oh, dull of heart! enclosed doth lie
 In each "Come, Lord," a "Here am I."
 Thy love, thy longing, are not thine,
 Reflections of a love divine:
 Thy very prayer to thee was given,
 Itself a messenger from heaven.
 Whom God rejects they are not so;
 Strong bands are round them in their woe;
 Their hearts are bound with bands of brass,
 That sigh or crying cannot pass.
 All treasure did the Lord impart
 To Pharaoh, save a contrite heart:
 All other gifts unto his foes
 He freely gives, nor grudging knows;
 But love's sweet smart and costly pain
 A treasure for his friends remain.'

WEDNESDAY, May 13, 1885. 1—4.

1. (a) TRANSLATE Judges iii. 15—26.

Comment on the following constructions:

אמר יד ימינו (v. 15)

שני פיות (v. 16)

ונעל (v. 23)

Explain and illustrate the force of בעדו (v. 23).

(b) In chap. v. 8 account for the version of the LXX. (Cod. Alex.) *ηρετισαν θεους κενους ως αρτον νεκροθυτον*.

Write critical notes on the following passages:

והיו לכם לצדים (ii. 3)

ויקחו את צדה העם בידם (vii. 8)

הלירשנו קראתם לנו הלא (xiv. 15)

ויסע את היתד הארג ואת המסכת (xvi. 14)

מעיר מתם (xx. 48)

2. Translate Prov. xxviii. 15—28.

3. Translate Haggai ii. 5—9, adding notes on the construction of

את הדבר (v. 5)

עוד אחת מעם היא (v. 6)

ובאו חמדת כל הגוים (v. 7)

כבוד הבית הזה האחרון (v. 9)

Discuss the grammatical difficulties in

לא עת בא עת בית יהוה להבנות (i. 2)

ואין אתכם אלי (ii. 17)

4. Translate Zech. ix. 11—17.

5. Translate:

שבעה דברים בגולם ושבעה בחכם החכם אינו מדבר לפני מי שגדל ממנו בחכמה ואינו נכנס לתוך דכרי חבירו ואינו נבהל להשיב שואל כהלכה ומשיב כענין ואומר על ראשון ראשון ועל אחרון אחרון על מה שלא שמע אומר לא שמעתי ומודה על האמת וחלופיהן בגולם.

שבעה מיני פרעניות באין על שבעה גופי עבירות מקצתן מעשרין ומקצתן שאינן מעשרין רעב של בצורת בא מקצתן רעבים ומקצתן שבעים גמרו שלא לעשר רעב של מהומה ושל בצורה בא ושלא ליטול חלה רעב של כלייה בא.

THURSDAY, May 14, 1885. 9—12.

1. TRANSLATE into HEBREW:

One day a boy was feeding the camels and the asses; and an ass as it grazed walked close up to the wall of the besieged city. The boy was afraid to go in and fetch it; and one of the Persians, when he saw it, descended by a rope from the wall, meaning to cut it in pieces and carry it up to be food for them, for there was no meat at all inside the city. But one of the Greek soldiers drew his sword and took his shield in his left hand and ran at the Persian to kill him. As he had come close up to the wall those who were standing on the wall threw down a great stone and crushed the Greek, and the Persian began to ascend to his place by the rope. When he had got halfway up the wall, one of the Greek officers drew near, with two shield-bearers walking before him, and shot an arrow from between them and struck the Persian and laid him beside the Greek.

2. Translate into HEBREW:

We hasten towards an unknown goal and forget it in eating and drinking. We are sparrows and flies and worms but more daring than hungry wolves. My roots reach down to the roots of the earth, but this Death spoils me of my youth, and of my soul he spoils me and of my body, and right soon he lays me in the dust. I have urged my camel through every desert, wide-stretching and shimmering with mirage; and I have ridden in the devouring host, and joined in the fray under every sky, till I longed for the home-coming rather than for booty. But can I—after king Hārith's death and after the death of Hōgr—can I hope for a gentler fate from the change of time, which does not spare the hard mountains. I know that I must soon be pierced by his talon and tooth as befell my father and my grandsire.

3. Point the following passages, marking pausal syllables and tone-syllables not final.

וַיֵּרֶד לִיעֶקֶב וַיְרִב בִּלְבָן וַיַּעַן יַעֲקֹב וַיֹּאמֶר לִלְבָן מַה פָּשַׁעִי מִה חַטָּאתִי
כִּי דִלַקְתָּ אֹחֲרִי : כִּי מִשְׁשַׁת אֶת כָּל כְּלִי מִה מִצָּאת מִבֵּל כְּלִי בֵּיתְךָ שִׁים כֹּה
נָגַד אֲחִי וְאֹחֲיוֹ וַיּוֹכִיחוּ בֵּין שְׁנֵינוּ : זֶה עֲשִׂים שָׁנָה אֲנִי עִמָּךְ רֹחֵלֶיךָ וְעִזֶיךָ
לֹא שָׁכְלוּ וְאֵלֵי צֹאנְךָ לֹא אֵבַלְתִּי : מִרְפָּה לֹא הִבֵּאתִי אֵלֶיךָ אֲנִי אֲחַמְנָה
מִיָּדִי תִבְקַשְׁנָה נִגְבְּתִי יוֹם וְנִגְבְּתִי לַיְלָה : הֵייתִי בַיּוֹם אֲכַלְנִי חֶרֶב וְקָרַח בַּלַּיְלָה
וְתוֹרַד שְׁנֵתִי מֵעֵינַי : זֶה לִי עֲשִׂים שָׁנָה בְּבֵיתְךָ עֲבַדְתִּיךָ אַרְבַּע עֶשְׂרֵה שָׁנָה
בְּשֵׁתִי בְּנִתִיךָ וְשֵׁשׁ שָׁנִים בְּצֹאנְךָ וְתַחֲלַף אֶת מִשְׁכַּרְתִּי עֶשְׂרֵת מָנִים :

ויפן וירד משה מן הרר ושני לחת העדת בידו לחת כתבים משני
עבריהם מזה ומזה הם כתבים : והלחת מעשה אלהים המה והמכתב מכתב
אלהים הוא חרות על הלחת : וישמע ידושע את קול העם ברעה ויאמר אל
משה קול מלחמה במחנה : ויאמר אין קול ענות נבונה ואין קול ענות
חלושה קול ענות אנכי שמע : ויהי כאשר קרב אל המחנה וירא את העגל
ומחלת וירד אף משה וישלך מידו את הלחת וישבר אתם תחת הרר :
דבק לשון יונק אל חבו בצמא עוללים שאלו לחם פרש אין להם :
האכלים למעדינים נשמו בחוצות האמנים עלי תולע חבקו אשפתות : ויגדל עון
בת עמי מחמאת סדם והפוכה כמו רגע ולא חלו בה ידים : זכו נזירה
משלג צחו מחלב אדמו עצם מפנינים ספיר נזרתם : חשך משחור תאדם לא
נכרו בחוצות צפר עורם על עצמם יבש היה כעין :
ויאמר בעז אל רות הלוא שמעת בתי אל תלכי ללקט בשדה אחר
וגם לא תעבורי מזה וכה תדבקין עם נערת : עיניך בשדה אשר יקצרון
והלכת אחריהן הלוא צייתי את הגערים לבלתי נגעך וצמת והלכת אל הבלים
ושתיית מאשר ישאבון הגערים : ותפל על פניה ותשתחו ארצה ותאמר אליו
מדוע מצאתי חן בעיניך להבירני ואנכי נכריה : ויען בעז ויאמר לה הגר
הגר לי כל אשר עשית את חמותך אחרי מות אישך ותעזבי אביך ואמך
וארץ מולדתך ותלכי אל עם אשר לא ידעת תמול שלשם :

Rewrite in strictly classical Hebrew, with points, the following passage:

ויש להם בומרים בכל מקום בבית עבודה וזה שלהם ואותם הבומרים
כשפנים גדולים אין כמותם בכל הארץ בכל מיני כשוף ולפני הבמה שלבית
תפלתם עמק גדול ומדליקין כל ימי עולם שם אש גדולה וקוראין אותה אלהותא
ומעבירין בה בנים וגם מיתידם משליכין בתוך האש :

THURSDAY, May 14, 1885. 1—4.

1. TRANSLATE Gen. xliii. 11, 12.

Give other examples of the form **אִפְעָלָה** and of the corresponding masculine form. What is the modification of the root sense proper to adjectives of this measure?

2. Give the leading translations that have been proposed for **אֱלֹהֵי אֱלֹהֵי** (Exod. iii. 14), and mention any similar phrases that help to a decision between them.

3. Translate Exod. xxi. 2—6 and justify your rendering of **רֵאשִׁיטִּים**.

Give other examples of *nomina instrumenti* of the same measure with **מִרְצָע**. Form such a noun from **אֵן**.

4. Translate Isaiah xlii. 18—25.

- What is peculiar in the use of the verb **פָּקַח** here?
- Form the abstract noun from **מִלְאָךְ** and explain its vowels.
- Explain the construction of verse 21.
- What is the singular of **בְּתֵי כְלָאִים**? In what other way does Hebrew sometimes form the plural of such a compound?
- Explain the marginal reading in verse 20.

5. Translate Psalm civ. 10—20.

- Why can **מִשְׁקָה** (v. 13) stand without the article?
- What is the precise sense of **עֵצִי יְדוּהָ** (v. 16)?
- Distinguish **סִלַּע** and **צוּר**, **צֶפֶר** and **צִפְרָת**.
- Explain the construction in ver. 20a.
- What other sense has **יָעַר** in Hebrew?

6. Translate Ps. cxiii. 4 and remark on the first and last words and the marginal variant.

7. Translate Canticles iii. 6—10, pointing out Aramaisms.

What words in these verses have no known Semitic root? Can you suggest anything as to their origin?

8. The following renderings of the Authorised Version present grammatical difficulties. Explain these difficulties and either justify the version or give a preferable rendering:—

- Isa. i. 20. "Ye shall be devoured with the sword." (Is Prov. xix. 23 a parallel case?)
- „ v. 11. "That continue until night, till wine inflame them."
- „ xii. 1. "Though thou wast angry with me, thine anger is turned away and thou comfortedst me."
- „ xvii. 6. "The outmost fruitful branches thereof."
- „ xxvi. 11. "They shall see, and be ashamed for their envy at the people."
- „ xxvi. 19. "Together with my dead body shall they arise."

9. What are the means to be used to determine the sense of a word or root which occurs but once in the Hebrew Bible? In what cases may it be reasonable to suppose that such a form is due to a corruption of the text?

FRIDAY, May 15, 1885. 9—12.

1. POINT the following passages, adding *metheg* and indicating when the accent falls on the penultimate:

(a) לא תראה את חמור אחיך או שורו נפלים בדרך והתעלמת מהם והקם תקים עמו: לא יהיה בלי גבר על אשה ולא ילבש גבר שמלת אשה כי תועבת יהוה אלהיך כל עשה אלה: כי יקרא קן צפור לפניך בדרך בכל עץ או על הארץ אפרחים או ביצים והאם רבצת על האפרחים או על הביצים לא תקח האם על הבנים: שלח תשלח את האם ואת הבנים תקח לך למען ייטב לך והארכת ימים: כי תבנה בית חדש ועשית מעקה לגגך ולא תשים דמים בביתך כי יפל הנפל ממנו: לא תזרע כרמך כלאים פן תקדש המלאה הזרע אשר תזרע ותבואת הכרם: לא תחרש בשור ובחמר יחדו: לא תלבש שעמנו צמר ופשתים יחדו:

(b) מי יתגני במדבר מלון ארחים ואעזבה את עמי ואלכה מאתם כי כלם מנאפים עצרת בגדים: וידרכו את לשונם קשתם שקר ולא לאמונה גברו בארץ כי מרעה אל רעה יצאו ואתי לא ידעו נאם יהוה: איש מרעהו השמרו ועל כל אח אל תבטחו כי כל אח עקוב יעקב וכל רע רכיל יהלך: ואיש ברעהו יתלול ואמת לא ידברו למדו לשונם דבר שקר העזה נלאו: שבתך בתוך מרמה במרמה מאנו דעת אותי נאם יהוה: לכן כה אמר יהוה צבאות הנני צורפם ובחנתיים כי איך אעשה מפני כח עמי:

2. Translate :

(א) חֲזוּה הָיִית עַד דִּי כְרִסְטִן רִמְיו וְעֵתִיק יוֹמִין יִתֵּב לְבִישָׁה כְּתִלָּג חָדָר
 וְשָׁעַר רֵאשִׁיָּה בְּעֵמֶר נִקָּא בְּרִסְיָה שְׂבִיבִין דִּי־נָגֵד גְּלָגְלוּהִי נָגֵד דִּלְק : נָגֵד דִּי־
 נָגֵד וְנִפְק מִן־קְדָמוּהִי אֶלְף אֶלְפִים יִשְׁמְשֻׁנָּה וְרֵבּוּ רֵבּוֹן קְדָמוּהִי יְקוּמִין דִּינָא
 יִתֵּב וְסִפְרִין פְּתִיחוּ : חֲזוּה הָיִית בְּאֲדִין מִן־קֵל מִלְּיָא רַבְרָבָתָא דִּי קָרָא מִמְלָלָא
 חֲזוּה הָיִית עַד דִּי קְמִילַת חֲזוּתָא וְהוּבַד גְּשָׁמָה וְהִיבַת לִיקְרַת אִשָּׁא : וְשָׁאָר
 חֲזוּתָא הָעֲדִיו שְׁלֻמְגֻרוֹן וְאַרְכָּה בְּחִין יְהִיבַת לְהוֹן עַד־זֶמֶן וְעַד : חֲזוּה הָיִית
 בְּחֻזִּי לִילְיָא וְאַרְז עַס־עֲנִי שְׁמִיָּא בְּבֵר אֲנִשׁ אֲתָה הָיָא וְעַד־עֵתִיק יוֹמִיָּא מָטָה
 וְקְדָמוּהִי הִקְרִבָהִי : וְלָהּ יִתֵּב שְׁלָמִן וְיָקֵר וּמִלְכּוֹ וְכָל עַמְמִיָּא אֲמִיָּא וְלִשְׁנָיָא
 לָהּ יִפְלָחוּן שְׁלָמָנָה שְׁלָמִן עֲלֵם דִּי־לָא יַעֲדָה וּמִלְכּוּתָהּ דִּי־לָא תִתְחַבֵּל :

(ב) וְאַלִישֵׁעַ מֵרַע יֵת מֵרַעִיָּה דִימֹת בִּיה וְנַחַת לוֹוֹתִיהּ יוֹאֵשׁ מֶלֶכָא דִּישְׂרָאֵל
 וּבִבְנָא עַל אֲפֻדֵּי וְאִמֵּר רַבִּי רַבִּי דַּמְב לִיה לִישְׂרָאֵל בְּצִלּוֹתֶיהּ מִרְתִּיכִין וּמִפְרִשִׁין :
 וְאִמֵּר לִיה אֲלִישֵׁעַ סָב קִשְׁתָּא וְגִירָדִיא וְנָסִיב לִיה קִשְׁתָּא וְגִירָדִיא : וְאִמֵּר לְמֶלֶכָא
 דִּישְׂרָאֵל אַחִית יֶדֶךְ עַל קִשְׁתָּא וְאַחִית יֶדֶהּ וְשׁוּי אֲלִישֵׁעַ יְדוּהִי עַל יָדָא דְּמֶלֶכָא :
 וְאִמֵּר פֶּתַח כּוּין לְמִרְנַחַא וּפֶתַח וְאִמֵּר אֲלִישֵׁעַ שְׂדֵי וְשָׂדָא וְאִמֵּר הָדִין גִּירָא יִתְעַבֵּד
 לְנָא פּוֹדֶקְנָא מִן קֶדֶם יְהוּה וְהָדִין גִּירָא יִתְעַבֵּד לְנָא נִצְחָנָא בְּאִינֵשׁ אֲרָם וְתִימְחִי
 יֵת אִינֵשׁ אֲרָם בְּאַפֵּק עַד דְּתִשְׁצִינֵן : וְאִמֵּר סָב גִּירָדִיא וְנָסִיב וְאִמֵּר לְמֶלֶכָא
 דִּישְׂרָאֵל מַחִי לְאַרְעָא וּמַחֵא תִלַּת זִימְנִין וּפֶסֶק : וְרַגּוּ עֲלוּהִי נְבִיא דִּיהוּה וְאִמֵּר
 הָא חֲזִי לָךְ לְמִימְחִי חֲמֵשׁ אוֹ שֵׁית זִמְנִין בְּכִין פֶּן מַחִיתָא יֵת אִנֵּשׁ אֲרָם עַד
 שְׁצִיּוֹתָא וְכַעַן תִּלַּת זִימְנִין תִּימְחִי יֵת אִינֵשׁ אֲרָם : וּמִית אֲלִישֵׁעַ וּקְבֻרוּהִי וּמִשְׁרִית
 מִתְּבָבִי עַלָּא בְּאַרְעָא בְּמִיעַל שְׁתָּא : וְהוּה עַד דְּאִינֵן קְבֻרִין גְּבֵרָא וְהָא חֲזוּ יֵת
 מִשְׁרִית וְרִמְיו יֵת גְּבֵרָא בְּקִיבְרָא דְּאַלִישֵׁעַ וְאוּל וּקְרִיב גְּבֵרָא בְּגֵרְמִי אֲלִישֵׁעַ וְחִיא
 וְקָם עַל רִיגְלוּהִי :

Add Greek vowels to piece (c).

[illegible]

FRIDAY, May 15, 1885. 1—4.

TRANSLATE the following passages, adding any needful notes.

1. Deuteronomy, xxiv. 5—13.

v. 7. Write a note on the various meanings of **כִּי** and **כִּי־נָפַשׁ** in Biblical Hebrew. What general sense attaches to nouns formed like **נִנְבָּה**? Give instances.

vv. 8, 10. Illustrate the grammatical form of **צִרְעָתָהּ**, and explain that of **מִשְׁאָתָהּ**.

v. 9. **זָכוֹר**. Explain with examples the use of the infinitive absolute in Hebrew.

2. 1 Kings xviii. 25—29: 2 Kings xi. 13—16: 2 Chronicles xxxii. 27—31.

3. Jeremiah xli. 3—11.

v. 8. Explain and illustrate the form **אֲבִידָהּ**.

v. 11. Account for the LXX. rendering of **תִּעְלָהּ** (*ōphéleia*).

4. Psalm xii.

Discuss the difficulties in verses 5, 7 and 9.

Translate the following:

וערוש בעליל לארץ כמו בעל הארץ, וערושו: אדון הארץ, וסני"ת שרש וסוף כפול
למ"ד הפעל נשקל סגיר וכלומר: האמרות האלה הן בבסוף צדוף מדון כל הארץ. ולמ"ד
לארץ כלמ"ד הרגו לאבד (שמואל ב ג ל); השלש לאבד (דברי הימים א ג ב), או תהיה במקום
ה"א הידיעה. ויש מפרשים (תרגום ורשי) בעליל סני"ת שמוש, וערושו: עליון ומסובת, כלומר:
בבסוף צדוף במסובת שנעפר שמושין ממנו הכור.

וערוש שבעתים פעמים רבות כפולות; כי מספר שבע ושבעה יבא בענין מספר רב, כמו
שבע כחטאיתכם (ויקרא כו כא); שבע יפול נדיק וקס (משלי כד טז) שבעה עינים (זכריה ג ט).
וכן שבעתים פעמים רבות כפולות; וכן שבעתים יקס (בראשית ד טו).

פרום ולות לבני אדם: כשיתרוממו הרשעים הוא ולות ופעלות לבני אדם; על דרך
ובמטל רשע יאנק עם (משלי כב ב). ולות ספן הכבוד.

5. Psalm lxv. 9—14.

SATURDAY, *May* 16, 1885. 9—12.

1. TRANSLATE into pointed BIBLICAL HEBREW :

(a) And now, when the multitude were gotten together to an assembly, and every one was in indignation at these men seizing upon the sanctuary, at their rapine and murders, but had not yet begun their attacks upon them (the reason of which was this, that they imagined it to be a difficult thing to suppress these zealots, as indeed the case was), Ananus stood in the midst of them, and casting his eyes frequently at the temple, and having a flood of tears in his eyes, he said, "Certainly it had been good for me to die before I had seen the house of God full of so many abominations, or these sacred places that ought not to be trodden upon at random, filled with the feet of these blood-shedding villains; yet do I, who am clothed with the vestments of the high priesthood, and am called by that most venerable name of high priest, still live, and am but too fond of living, and cannot endure to undergo a death which would be the glory of my old age: and if I were the only person concerned, and as it were in a desert, I would give up my life, and that alone for God's sake: for to what purpose is it to live among a people insensible of their calamities, and where there is no notion remaining of any remedy for the miseries that are upon them? for when you are seized upon, you bear it, and when you are beaten, you are silent, and when the people are murdered, no body dare so much as send out a groan openly."

(β) When my devotions could not pierce
 Thy silent ears;
 Then was my heart broken, as was my verse;
 My breast was full of fears
 And disorder.

* * *

O, that Thou shouldst give dust a tongue
 To cry to Thee,
 And then not hear it crying! all day long
 My heart was in my knee,
 But no hearing.

Therefore my soul lay out of sight,
 Untuned, unstrung:
 My feeble spirit, unable to look right,
 Like a nipt blossom, hung
 Discontented.

O cheer and tune my heartless breast,
 Defer no time;
 That so Thy favours granting my request,
 They and my mind may chime,
 And mend my rhyme.

G. HERBERT.

2. Add vowel points and the accents Ethnach and Silluq to the following passages:

(a) וישמע משה את העם בכה למשפחתיו איש לפתח אהלו ויחר אף יהוה מאד ובעיני משה רע: ויאמר משה אל יהוה למה הרעת לעבדך ולמה לא מציתי חן בעיניך לשום את משא כל העם הזה עלי: האנכי הריתי את כל העם הזה אם אנכי ילדתיהו כי תאמר אלי שאהו בחינקך כאשר ישא האמן את הינק על האדמה אשר נשבעת לאבתיו: מאין לי בשר לתת לכל העם הזה כי יבכו עלי לאמר תנה לנו בשר ונאכלה: לא אוכל אנכי לבדי לשאת את כל העם הזה כי כבד ממני: ואם ככה את עשה לי הרנני נא הרג אם מצאתי חן בעיניך ואל אראה ברעתי:

(b) ויהי דבר יהוה אלי לאמר: בן אדם אמר לה את ארץ לא מטהרה היא לא נשמה ביום זעם: קשר נביאיה בתוכה כארי שואג טרף טרף נפש אכלו חסן ויקר יקחו אלמנותיה הרבו בתוכה: כהגיה חמסו תורתי ויחללו קדשי בין קדש לחל לא הבדילו ובין הטמא לטהור לא הודיעו ומשבתותי העלימו עיניהם ואחל בתוכם: שריה בקרבה כואבים טרפי טרף לשפך דם לאבד נפשות למען בצע בצע: ונביאיה טחו לדם תפל חזים שוא וקסמים לדם כזב אמרים כה אמר אדני יהוה ויהוה לא דבר: עם הארץ עשקו עשק וגזלו גזל ועני ואביון הונו ואת דגר עשקו בלא משפט: ואבקש מדם איש גדר גדר ועמד בפרץ לפני בעד הארץ לבלתי שחתה ולא מצאתי: ואשפך עלידם זעמי באש עברתי כליתים דרכם בראשם נתתי נאם אדני יהוה:

SATURDAY, May 16, 1885. 1—4.

1. TRANSLATE, with short notes:

(a) 1 Samuel xxv. 26—31.

- v. 26. Comment on the construction of $\text{וְהָיָה... וְהָיָה}$, and on the Sept. rendering, $\xi\eta\ \kappa\acute{\upsilon}\rho\iota\omicron\varsigma\ \kappa\alpha\iota\ \xi\eta\ \eta\ \psi\upsilon\chi\eta\ \sigma\omicron\upsilon$: also on the construction of אֲשֶׁר , and יָד .
- v. 27. Illustrate the construction and meaning of דְּבַרְכָּה .
- v. 28. Point out clearly the relation of the clauses.
- v. 29. Discuss the Sept. rendering $\kappa\alpha\iota\ \alpha\nu\alpha\sigma\tau\eta\sigma\epsilon\tau\alpha\iota$, and Thenius' conjecture וַיִּקָּם .
- v. 31. Comment on the construction of $\text{וְלִשְׁפָךְ... וְלִדְרוֹשִׁיעַ}$.

(β) Micah vii. 9—13.

- v. 10. Explain the forms וְתִרְאָה , וְתִרְאִינָה .
- v. 11. Comment on יִרְחַק חֶק .
- v. 13. Discuss the meaning of this verse, and its connexion with the context.

(γ) Job xxvi.

- v. 3. Discuss תְּנִשִּׂיה .
- vv. 5, 12, 13. Discuss briefly the meaning of these verses, and give the general sense of the passage.

2. Explain and illustrate the constructions, or criticise the text, of the following:

- (a) 2 Samuel xxi. 5.
 (β) Ezekiel xxvii. 13.
 (γ) „ xlv. 16.
 (δ) Hosea vi. 1.

3. Translate:

גִּפְן בְּזִיזָא יִשְׂרָאֵל דְּהוּה גִּפְן נְצִיב בְּמַעֲבְרֵיהָ אֹרִיתָא פְּרִי עֹבְדֵיהֶון גִּרְמֹו
 לְהֶון דִּיגְלֹון כְּד אִסְגִּיתִי לְהֶון עֲלֵלָא אִסְגִּיאוּ פֻּלְחֹון לְאַגֻּרִיהֶון כְּד אִיתִיתִי מִבְּנָא
 לְאַרְעֶהֶון אֹמִיבֹו לְקַמְתָּהֶון: אַתְּפִלְג לְבָהֶון מִן אֹרִיתָא כַּעַן יְחֻבֹון כַּעַן אִיתִי
 עֲלֵיהֶון סְנָאָה יְחֻזֵּר מִדְּלָהֶון דְּאַגֻּרִיהֶון יְבֹו קַמְתָּהֶון: אֲרִי כַּעַן יִמְרוֹן לִית מַלְכָּא
 לֵנָּא אֲרִי לֹא דַחֲלָנָא מִן קִדְּם " וּמַלְכָּא מַה יַּעֲבֹד לֵנָּא: מִמְּלָלִין מִלִּין דְּאוֹנִם

יִמֵּן לַשֹּׁקֶר לִלְמָא גִזְרִין קִים כַּעַן אֵיתִי עֲלֵיהֶן כְּרִישֵׁי חוּץ בִּישִׁין דִּין שְׁקָרִיהֶן
עַל תַּחֲוִמֵי חֻקְלָן : עַל דִּי פִלְחוּ לַעֲגִילָא בְּבִיתָאֵל מֶלֶךְ בְּמִשְׁרִיתָהּ יִסַּק עֲלֵיהֶן
וַיִּגְלִי יִתְהוֹן יִסְבֹּן מִנְהֶן עֲגִילָא דְשִׁמְרוֹן אֲרִי אֲתֵאֱבָלוּ עֲלוֹהֵי עֲמִיה וּפִלְחוֹהֵי עֲלוֹהֵי
יְבוּעֹן עַל יִקְרִיה אֲרִי גִלָּה מְנִיה : אֵף יִתִּיה לֵאחֹר יוֹבֵלֹן קוֹרְבָנָא לְמַלְכָּא דִּיִּיתִי
לֵאחֲפֹרְעָא לְהוֹן נְבִיא אִמֵּר לְהוֹן בְּהִתָּא דְּבֵית אֲפֹרִים יִקְבֹּלוֹן וַיִּבְהֲתוֹן דְּבֵית
יִשְׂרָאֵל מִמְּלִכֵי עֲצָתָהוֹן : בְּהִתָּת שִׁמְרוֹן בְּמַלְכָּה כְּרוּתָחָא עַל אֲפִי מִיא :

4. Translate, with brief notes and criticisms:

(א) בֵּית נֶאֱמָן. כְּתַרְגָּמוֹ מִלְכוֹ קִימָא וּדְרָךְ נְבוֹאָה אִמְרָה זֶה כִּי הִיא אֶחָת מִשְׁבַּע נְבִיאֹת
עַל דַּעַת ר'ז"ל וַיֵּשׁ לַפֶּרֶשׁ כִּי הִיא הַדְּבָר נִשְׁמַע וְנוֹדַע, בִּישֶׁר' כִּי דוֹד נִשְׁמַשׁ לְמֶלֶךְ כְּמוֹ שֶׁאִמְרָה כָּכָל
אֲשֶׁר דָּבַר אֶת הַטּוֹבָה עֲלֵיךְ וְנוֹךְ לְנֶגִיד עַל יִשְׂרָאֵל : לֹא תִמְנָא בְךָ עֵתִיד מִמָּקוֹם עֵבֶר כְּמוֹ לֹא
נִמְנָאָה וּמִלֵּת מִימֶיךָ יוֹכִיחַ זֶה וְכֵן תִּרְגְּמוּ לֹא אֶשְׁתַּכַּחַת : רַד"ק

(ב) מֵאִי שָׂנֵא עוֹבְדֵיה לְאִדּוּס וְלֹא נִיבָא נְבוֹאָה אֶחָת אִמְרוּ חֲכָמִי עוֹבְדֵיה גַּר אֲדוּמִי הִיא
אִמ' הַקִּבָּ"ה מֵהֶם וְהֵם אֵינִי עֲלֵיהֶם יִבּוֹא עוֹבְדֵיה שְׂדֵר בֵּין שְׁנֵי רִשְׁעֵי אֶחָד וְאֵיזֶבֶל וְלֹא לְמַד
מִמַּעֲשֵׂיהָ וַיִּפְרַע מַעֲשֵׂו הַרְשַׁע שְׂדֵר בֵּין שְׁנֵי לְדִיקִים יִנְחָק וְרִבְקָה וְלֹא לְמַד מִמַּעֲשֵׂיהֶם : הֵנָּה קֶטֶן
נִתְחַיֵּךְ. כִּלְפֵי שְׁקָרָאוּ אֵבִיו בְּנוֹ הַגְּדוֹל וְאִמּוֹ בְּנָה הַגְּדוֹל אִמֵּר הַקִּבָּ"ה לִפְנֵי קֶטֶן הוּא וְרִבְוִתִּינוּ
דְּרִשׁוּ קֶטֶן שֶׁאֵין לָהֶם לֹא כְּתָב וְלֹא לִשׁוֹן בְּזוּי שֶׁאֵין מַעֲמִיד' מֶלֶךְ בֶּן מֶלֶךְ : שׁוֹכְנֵי בַּחֲבוּי סִלְעַ.
סוּמֶךְ עַל מַשְׁעֶנֶת אֲבוֹתָיו אֲבָרְהָם וַיִּנְחָק וְהֵם לֹא יוֹעִילוּ לוֹ. חֲבוּי כְּמוֹ וְהִיתָה אֲדַמַּת יִשׁוּדָה
לְמַנְרִים לְחֻגָּא בְּרִיט"ינָא בִּלְע"ז וְאֵל תִּתְמַה עַל וַי"ו שֶׁל חֲבוּי שֶׁהִיא כּוֹי"ו שֶׁל קִזּוּי וְכוֹי"ו
שֶׁל מַטְפוֹי שֶׁאֵין יִסוּד בְּתִיבָה אֵלָּא טִי"ת וְסִי"ת : רִש"י :

CLASSICAL TRIPOS.

PART I.

MONDAY, 25 *May*, 1885. 9 to 10.30 A.M.

GREEK HISTORY AND ANTIQUITIES.

1. "THERE is good reason for believing that the political organisation of a large number of the early Greek tribes took the form of a federal union." What evidence, direct or inferential, have we for this? Account for the fact that so few of the early federations survived into historical times.

2. Write down a brief chronological survey of the relations between Greece and Persia, during the years 510—466 B.C., particularly distinguishing the various Persian expeditions against Greece, and their leaders.

3. What was the military position of Athens, as compared with that of Sparta, at the time of the expedition of Brasidas to Thrace? Explain the main objects of that expedition, and state how far they were realised.

4. Explain the circumstances which led to the outbreak of war between Sparta and Persia in 399 B.C. Trace the course of the war and account for its abrupt termination in Asia.

5. Trace the gradual separation of the functions of the general from those of the statesman at Athens, and estimate the effect of that separation during the struggle with Philip upon (a) the policy of the state as a whole, (b) the generals themselves, (c) the allies.

6. Discuss the main features of the poetry of Aeschylus.

OR

Explain the functions of the *βουλή* and of the *ἐκκλησία* at Athens with regard to legislation and finance.

MONDAY, 25 *May*, 1885. 10.30 to 12 A.M.

ROMAN HISTORY AND ANTIQUITIES.

1. DESCRIBE accurately the character of the Valerio-Horatian laws, and the circumstances in which they were passed.

2. Explain the political organization of Italy under the Romans at the time of the outbreak of the second Punic War, and point out the subsequent changes in this organization.

3. Compare the political measures and aims of C. Gracchus, C. Marius, and C. Julius Caesar.

or

Trace the course of events between 42 B.C. and 29 B.C. leading to the establishment of the empire.

4. Trace the progress of Roman dominion in Asia Minor, down to the end of the campaigns of Pompeius.

5. Compare the administration of the provinces under the early emperors with that under the later republic.

6. Compare generally the literature of the Augustan and Flavian ages.

or

What light is thrown upon the state of education under the emperors before Hadrian by the Latin literature of the period?

MONDAY, 25 May, 1885. 1.30 to 3 P.M.

GREEK GRAMMAR AND CRITICISM.

1. SHEW by a map or description the distribution of the Greek dialects, briefly characterising each.

Discuss the nature and relations of the Homeric dialect.

2. Explain the formation of the words *ἔδομαι*, *ἔδμεναι*, *πεφυζότες*, *ἴξον*, *δο*, *εἵξασιν*, *δικασπόλος*, *ἀκήν*.

3. Remark on the uses of the genitive case in the following extracts (which are to be translated): (a) οἱ λαγὼ τῆς νυκτὸς νέμονται. XEN. (b) ἐλκόμεναι νειοῖο θαθείης πηκτὸν ἄροτρον. HOM. (c) αἰὲν Ἑρωτος ἀκράτῳ ἐπεχεῖτο. THEOC. (d) ἐκκόψειέ γε κόραξ (τὸν ὀφθαλμόν) τὸν τε σὸν τοῦ πρέσβεως. ARISTOPH. (e) ἔγνωκα γὰρ δὴ φωτὸς ἠπατημένη. SOPH. (f) προπέτοται τῆς παραντίκα χάριτος τὰ τῆς πόλεως πράγματα. DEM.

4. Give the meanings and constructions of *ἐπαυρέσθαι*, *καταβοᾶν*, *ὑπακούειν*, *δεσθῆναι*, *προσιεσθαι*, *ἡγείσθαι*.

5. What are the restrictions in Attic prose on the use of the parts of *ἔρχομαι* and *θνήσκω*, the compounds of *λέγω*, the preposition *σύν*, the future optative, and the imperfect in *oratio obliqua*?

What is the position of Xenophon in connexion with Attic style?

6. Translate the following sentences with notes on grammatical points:

(a) κατηγορουμένου δ' αὐτοῦ ὅτι ὑστερήσειεν εἰς Ἀλίартον τοῦ Λυσάνδρου, θάνατος αὐτοῦ κατεγνώσθη. XEN. *Hell.* III. 5. 25.

(b) εἶπεν ὅτι οὐ ῥάδιον εἴη οὐθ' ὁμολογεῖν οὔτε ἐξάρνῃ εἶναι τὰ ἐρωτώμενα. PLATO *Charm.* 158 c.

(c) φεῦ φεῦ· τὸ μὴ τὰ πράγματ' ἀνθρώποις ἔχειν φωνήν, ἢν' ἦσαν μηδὲν οἱ δεινοὶ λέγειν. EURIP. fr. 442.

What are the rules for *οὐ* and *μὴ* with the infinitive?

(d) εἰ τοίνυν ἂν ἐμοὶ τότε ὠργίζεσθε, ὅτι οὐκ ἐπετριάρχησα, πῶς οὐχὶ νῦν προσήκει ὑμᾶς τοῦτον εἰσπράξαι μοι τὰ ἀναλώματα, ἃ ἐγὼ ὑπὲρ τούτου ἀνήλωσα; DEM. *Polycl.* 67.

(e) ἦν τις ψαύση ὑδς, αὐτοῖσι ἱματίοις ἀπ' ὧν ἔβαψε ἐωντὸν βὰς ἐπὶ τὸν ποταμόν. HEROD. II. 47.

MONDAY, 25 May, 1885. 3 to 4.30 P.M.

LATIN GRAMMAR AND CRITICISM.

1. (a) EXPLAIN the usages and probable history in Latin of the following forms, viz : *attigas*, *cuiusmodi*, *dumtaxat*, *duint*.

(b) What are the reasons against spelling *coelum*, *concio*, *moestus*?

(c) Is it correct to call *nummum* (gen. plural) a contracted form, and if not, why?

2. Define and illustrate the uses of the case forms given in italics in the following extracts:

(a) *triumphum* clamare.

(b) quid tibi *hanc* notios?

(c) postridie *idus*.

(d) *memoriae* hominum recurret.

(e) *seruitio* promptior.

(f) nescio quid *huius rei* sit.

(g) *boni* hoc consulo.

(h) *foederis* heu taciti!

(i) *uno* boum *iugo* censi anno facilis agri quadragena iugera iustum est.

3. (a) Classify the syntactical uses of the infinitive, with illustrations.

(b) Shew by examples how the uses of the infinitive were extended in silver Latin prose as compared with classical Latin prose.

4. State the usages of the prepositions *ergo*, *tenus*, *super*, *citra*.

5. Turn into oratio obliqua the following passage:

Quid dubitas ergo quin sedendo superaturi simus eum qui senescat in dies? quam diu pro Gereonii tamquam pro Carthaginis moenibus sedet? sed ne aduersus te quidem gloriabor; Cn. Servilius atque Atilius, proximi consules, uide quem ad modum eum ludificati sint. Resistes ipse, si te neque conlegae uana gloria neque tua falsa infamia mouerit. Gloriam qui spreuerit, ueram habebit.

6. Explain why the following passages are defective in their Latinity:

(a) inuidia uolgi, quod tribus militibus fortuna publica commissa fuerit, uanum ingenium dictatoris corrumpit.

(b) miror uolgo credere Poenino Hannibalem transgressum; qui saltus eum non in Taurinos sed in Libuos Gallos deduxerit.

(c) hoc ille natus, quamuis patrem suum numquam uiderat, tamen natura ipsa duce in paternae uitae similitudinem deductus est. CICERO.

(d) neque minus Milesios quam Sardianos Dareo rege niti; sed cultus numinum utrisque Dianam aut Apollinem uenerandi.

(e) nam et scribendi ratio coniuncta cum loquendo est et enarrationem praecedat emendata lectio.

TUESDAY, 26 May, 1885. 9 to 12 A.M.

For LATIN PROSE :

1. Whilst *Bamfield* was about the Person of the Duke of York, he had infused into him a marvellous desire to be possessed of the Government of the Fleet: but the Duke was convinced with much ado, that it was neither safe for his Highness, nor for his Father's Service, that he should be embarked in it: and *Bamfield*, by an especial Command from the King, who had discover'd more of his foul practices than could be known to the Prince, was not suffer'd to come any more near the Person of the Duke.....From this time the Duke, who was not yet above fifteen years of Age, was so far from desiring to be with the Fleet, that, when there was once a Proposition, upon occasion of a suddain Mutiny amongst the Seamen, that he should go to *Helvoet Sluce*, to appear amongst them, who professed great Duty to his Highness, he was so offended at it that he would not hear of it; and he had still some Servant about him who took pains to persuade him, that the Council had inclined the Prince to that designation, out of ill will to his Highness, and that the Ships might deliver him up to the Parliament. So unpleasant, and uncomfortable a Province had those Persons, who, being of the King's Council, serv'd both with great Fidelity; every Body who was unsatisfied (and no Body was satisfied) aspersing them, or some of them (for their prejudice was not equal to them all) in such a manner as touch'd the honour of the rest, and most reflected upon the King's own Honour, and Service.

CLARENDON.

2. With the recognition of rights in human beings as such, on which we have previously dwelt, there comes a new realisation of human capacities, not only for the emancipated multitude, but for those whom Aristotle would have allowed to be previously sharers in the *βίος πρακτικός*. The problems of life become for them far more difficult indeed, but just on account of their greater range and complication, they become of such a kind as to elicit powers previously unused. We are apt to speak as if the life of the Greek or Roman citizen, in the full bloom of municipal civilisation, was much fuller and richer than that of the modern citizen under a regime of universal freedom and equal rights. For the many we admit the modern system may be a gain, but for the few we take it to be a corresponding loss. Yet this is surely a very superficial view. The range of faculties called into play in any work of social direction or improvement must be much wider, when the material to be dealt with consists no longer of supposed chattels, but of persons asserting recognised rights, whose welfare forms an integral element in the social good which the directing citizen has to keep in view.

T. H. GREEN.

TUESDAY, 26 May, 1885. 1.30 to 4.30 P.M.

TRANSLATE into English Prose, with short marginal notes:

1. ὥς φάτο, καὶ παριῶν λᾶξ ἔνθορεν ἀφραδίῃσιν
 ἰσχίῳ· οὐδέ μιν ἐκτὸς ἀταρπιτοῦ ἐστυφέλιξεν,
 ἀλλ' ἔμεν' ἀσφαλέως· ὁ δὲ μερμήριζεν Ὀδυσσεὺς
 ἢ μεταίξας ῥοπάλῳ ἐκ θυμὸν ἔλοιτο,
 ἢ πρὸς γῆν ἐλάσειε κάρη ἀμφουδὶς αἰέρας.
 ἀλλ' ἐπετόλμησε, φρεσὶ δ' ἔσχετο· τὸν δὲ συβώτης
 νεῖκεσ' ἐσάντα ἰδὼν, μέγα δ' εὐξατο χεῖρας ἀνασχών·
 Νύμφαι κρηναῖαι, κοῦραι Διὸς, εἴποτ' Ὀδυσσεὺς
 ὑμῖ· ἐπὶ μηρί' ἔκθε, καλύψας πῖονι δημῷ,
 ἄρνων ἢ δ' ἐρίφων, τόδε μοι κρηήνατ' ἐέλωρ,
 ὥς ἔλθοι μὲν κείνος ἀνὴρ, ἀγάγοι δὲ ἐ δαίμων·
 τῷ κέ τοι ἀγλαΐας γε διασκεδάσειεν ἀπάσας,
 τὰς νῦν ὑβρίζων φορέεις, ἀλαλήμενος αἰεὶ
 ἄστνυ κάτ'· αὐτὰρ μῆλα κακοὶ φθείρουσι νομῆες.
 τὸν δ' αὖτε προσέειπε Μελάνθιος, αἰπόλος αἰγῶν·
 ὦ πόποι, ὅλον ἔειπε κύων ὀλοφώϊα εἰδώς,
 τὸν ποτ' ἐγὼν ἐπὶ νηὸς εὐσσέλμοιο μελαίνης
 ἄξω τῆλ' Ἰθάκης, ἵνα μοι βίοντον πολὺν ἄλφοι.
 αἱ γὰρ Τηλέμαχον βάλοι ἀργυρότοξος Ἀπόλλων
 σήμερον ἐν μεγάροις, ἢ ὑπὸ μνηστῆρσι δαμείῃ,
 ὥς Ὀδυσσῆϊ γε τηλοῦ ἀπώλετο νόστιμον ἡμῶν.

HOMER *Odys.* xvii 233—253.

2. βοᾷ δ' ἐκκενουμένα πόλις,
 λαΐδος ὀλλυμένας μιξοθρόου·
 βαρείας τοι τύχας προταρβῶ.
 κλαντὸν δ' ἀρτιδρόποις ὠμοδρόπων
 νομίμων προπάροιθεν διαμεῖψαι
 δωμάτων στυγεράν ὁδόν.
 τί; τὸν φθίμενον γὰρ προλέγω
 βέλτερά τῶνδε πράσσειν.
 πολλὰ γὰρ, εὔτε πτόλις δαμασθῇ,
 ἐῖ, δυστυχῇ τε πράσσει.
 ἄλλος δ' ἄλλον ἄγει,
 φονεύει, τὰ δὲ καὶ πυρφορεῖ·
 καπνῷ χραίνεται πόλις μ' ἅπαν
 μαινόμενος δ' ἐπιπνεί λαοδάμας
 μαιίνων εὐσέβειαν Ἄρης.
 κορκορυγαὶ δ' ἀν' ἄστνυ, ποτὶ δ' ὀρκάνα
 πυργῶτις.

πρὸς ἀνδρὸς δ' ἀνὴρ στὰς δορὶ καίνεται·
 βλαχαὶ δ' αἱματόεσσαι
 τῶν ἐπιμαστιδίων
 ἄρτι βρεφῶν βρέμονται.
 ἀρπαγαὶ δὲ διαδρομῶν ὁμαίμονες·
 ξυμβολεῖ φέρων φέροντι,
 καὶ κενὸς κενὸν καλεῖ,
 ξύννομον θέλων ἔχειν,
 οὔτε μείον οὔτ' ἴσον λελιμμένοι
 τοῖς ἐκ τῶνδ' εἰκάσαι λόγος πάρα.
 παντοδαπὸς δὲ καρπὸς χαμάδις πεσὼν ἀλ-
 γύνει κυρήσας
 πικρὸν γ' ὄμμα θαλαμηπόλων·
 πολλὰ δ' ἀκριτόφυρτος
 γᾶς δόσις οὔτιδανόις
 ἐν ῥοθίοις φορεῖται.

ÆSCHYLUS *Septem c. Thebas* 330—362.

3. ΔΙΧΑΣ. ἄπειμι. μῶρος δ' ἡ πάλα κλύων σέθεν.
 ΑΓΓΕΛΟΣ. οὐδ', πρίν γ' ἂν εἴπῃς ἱστορούμενος βραχύ.
 ΔΙ. λέγ', εἴ τι χρήσεις· καὶ γὰρ οὐ συνηλὸς εἰ.
 ΑΓ. τὴν αἰχμάλωτον, ἣν ἔπεμψας ἐς δόμους,
 κάτοιισθα δῆπου; ΔΙ. φημί· πρὸς τί δ' ἱστορεῖς;
 ΑΓ. οὐκ οὖν σὺ ταύτην, ἣν ὑπ' ἀγνοίας ὄρῃς,
 Ἰόλην ἔφασκες Εὐρύτου σπορὰν ἄγειν;
 ΔΙ. ποίοις ἐν ἀνθρώποισι; τίς πόθεν μολῶν
 σοὶ μαρτυρήσει ταῦτ' ἐμοῦ κλύειν παρῶν;
 ΑΓ. πολλοῖσιν ἀστῶν. ἐν μέσῃ Τραχυνίων
 ἀγορᾷ πολὺς σου ταῦτά γ' εἰσηκουσ' ὄχλος.
 ΔΙ. κλύειν γ' ἔφασκον. ταῦτό δ' οὐχὶ γίγνεται
 δόκησιν εἰπεῖν κάξακριβῶσαι λόγον.
 ΑΓ. ποίαν δόκησιν; οὐκ ἐπώμοτος λέγων
 δάμαρτ' ἔφασκες Ἡρακλεῖ ταύτην ἄγειν;
 ΔΙ. ἐγὼ δάμαρτα; πρὸς θεῶν, φράσον, φίλη
 δέσποινα, τόνδε τίς ποτ' ἐστὶν ὁ ξένος.
 ΑΓ. ὅς σου παρῶν ἤκουσεν ὡς ταύτης πόθῳ
 πόλις δαμείῃ πᾶσα, κοῦχ ἡ Λυδία
 πέρσειεν αὐτήν, ἀλλ' ὁ τῆσδ' ἔρως φανείη.
 SOPHOCLES *Trachin.* 414—433.
4. ΧΟΡΟΣ. φασὶν ἀλλήλαις ξυνελθεῖν τὰς τριήρεις εἰς λόγον,
 καὶ μίαν λέξαι τιν' αὐτῶν, ἥτις ἦν γεραιτέρα·
 οὐδὲ πυνθάνεσθε ταῦτ', ὦ παρθένοι, τὰν τῇ πόλει;
 φασὶν αἰτεῖσθαί τιν' ἡμῶν ἑκατὸν ἐς Καλχηδόνα
 ἄνδρα μοχθηρὸν πολίτην, ὀξύνην Ἑτέρβολον·
 ταῖς δὲ δόξαι δεινὸν εἶναι τοῦτο κοῦκ ἀνασχετόν,
 καὶ τιν' εἰπεῖν, ἥτις ἀνδρῶν ἄσπον οὐκ ἐληλύθει·
 ἀποτρόπαί, οὐ δῆτ' ἐμοῦ γ' ἄρξει ποτ', ἀλλ' ἐάν με χρῇ,
 ὑπὸ τερηδόνων σαπείῳ ἐνταῦθα καταγνῆσθαι·
 οὐδὲ Ναυφάντης γε τῆς Ναύσωνος, οὐ δῆτ', ὦ θεοί,
 εἴπερ ἐκ πύκνης γε ἀγῶ καὶ ξύλων ἐπηγνύμην.
 ἦν δ' ἀρέσκη ταῦτ' Ἀθηναίοις, καθῆσθαι μοι δοκεῖ
 εἰς τὸ Θησεῖον πλεύουσας ἢ πλὶ τῶν σεμνῶν θεῶν.
 οὐ γὰρ ἡμῶν γε στρατηγῶν ἐγχανεῖται τῇ πόλει·
 ἀλλὰ πλείτω χωρὶς αὐτός ἐς κόρακας, εἰ βούλεται,
 τὰς σκάφας, ἐν αἷς ἐπώλει τοὺς λύχνους, καθελκύσας.
 ARISTOPHANES *Equites* 1300—1315.
5. τήναν τὰν λαύραν τᾷ θ' αἱ δρῦες αἰπόλε κάμψας
 σύκινον εὐρήσεις ἀρτυγλυφές ξόανον.
 σακὸς δ' εὐίερος περιδέδρομεν, ἀέναον δέ
 ρεῖθρον ἀπὸ σπιλάδων πάντοσε τηλεθάει
 δάφναις καὶ μύρτοισι καὶ εὐώδει κυπαρίσσῳ.
 ἐνθα πέριξ κέχυται βοτρυόπαις ἑλικί
 ἄμπελος, εἰαρινοὶ δὲ λιγυφθόγγοισιν αἰοιδαῖς
 κόσσυφοὶ ἀχεῦσιν ποικιλότραυλα μέλη.
 ξουθαὶ δ' ἀδονίδες μινυρίσμασιν ἀνταχεῦσι
 μέλπουσαι στόμασιν τὰν μελίγαρυν ὅπα.
 ἔξεο δὴ τῆνεϊ καὶ τῷ χαρίεντι Πριήπῳ
 εὐχεῖ ἀποστέρεξαι τοὺς Δάφνιδος με πόθους,
 κεῦθὺς ἐπιρρέξειν χίμαρον καλόν. ἦν δ' ἀνανεύσῃ,
 τοῦδε τυχῶν ἐθέλω τρισσὰ θῆναι τελέσαι·
 ῥέξω γὰρ δαμάλαν, λάσιον τράγον, ἄρνα τὸν ἰσχω
 σακίταν. αἶτοι δ' εὐμένεως ὁ θεός.
 THEOCRITUS *Epigram* XVII (IV) on Priapus.

WEDNESDAY, 27 *May*, 1885. 9 to 12 A.M.

For GREEK IAMBICS:

Forsake me not thus, Adam; witness, Heaven,
 What love sincere and reverence in my heart
 I bear thee, and unweeting have offended,
 Unhappily deceived! Thy suppliant
 I beg, and clasp thy knees; bereave me not
 Whereon I live, thy gentle looks, thy aid,
 Thy council, in this uttermost distress,
 My only strength and stay; forlorn of thee,
 Whither shall I betake me, where subsist?
 While yet we live, scarce one short hour perhaps,
 Between us two let there be peace, both joining,
 As join'd in injuries, one enmity
 Against a foe by doom express assign'd us,
 That cruel serpent. On me exercise not
 Thy hatred for this misery befallen,
 On me already lost, me than thyself
 More miserable. Both have sinn'd, but thou
 Against God only, I against God and thee,
 And to the place of judgment will return,
 There with my cries importune Heaven, that all
 The sentence from thy head remov'd may light
 On me, sole cause to thee of all this woe,
 Me, me only, just object of his ire.

MILTON, *Paradise Lost*.

For GREEK ELEGIACS:

Lo! where the four mimosas blend their shade,
 In calm repose at last is Landor laid;
 For ere he slept he saw them planted here
 By her his soul had ever held most dear,
 And he had lived enough when he had dried her tear.

LANDOR.

WEDNESDAY, 27 May, 1885. 1.30 to 4.30 P.M.

TRANSLATE with short marginal notes:

1. Segestam item ad immunem civitatem Venerius Symmachus decumanus immittitur. is ab isto litteras adfert, ut sibi contra omnia senatus consulta, contra omnia iura contraque legem Rupiliam extra forum vadimonium promittant aratores. audite litteras quas ad Segestanos miserit. LITTERAE C. VERRIS. hic Venerius quem ad modum aratores eluserit ex una pactione hominis honesti gratiosique cognoscite: in eodem enim genere sunt cetera. Diocles est Panhormitanus, Phimes cognomine, homo illustris ac nobilis. arabat is agrum conductum in Segestano—nam commercium in eo agro nemini est—: conductum habebat HS sex milibus: pro decuma, cum pulsatus a Venerio esset, decedit HS XVI milibus et medimnis IOCLIII. id ex ipsius tabulis cognoscite. NOMEN DIOCLIS PANHORMITANI. huic eidem Symmacho C. Annaeus Brocchus, senator, homo eo splendore, ea virtute, qua omnes existimatis, nummos praeter frumentum coactus est dare. Venerione servo te praetore talis vir, senator populi Romani, quaestui fuit? hunc ordinem si dignitate antecellere non existimabas, ne hoc quidem sciebas, iudicare? antea cum equester ordo iudicaret, improbi et rapaces magistratus in provinciis inserviebant publicanis: ornabant eos, qui in operis erant: quemcumque equitem Romanum in provincia viderant, beneficiis ac liberalitate prosequabantur.

CICERO *Verr.* II 3. 92—94.

2. in equitatu recognoscendo L. Scipioni Asiageni ademptus equus. in censibus quoque accipiendis tristis et aspera in omnes ordines censura fuit. ornamenta et vestem muliebrem et vehicula, quae pluris quam quindecim milium aeris essent deciens pluris in censum referre iuratores iussit; item mancipia minora annis viginti, quae post proximum lustrum decem milibus aeris aut eo pluris venissent, uti ea quoque deciens tanto pluris quam quanti essent aestimarentur, et his rebus omnibus terni in milia aeris attribuerentur. aquam publicam omnem in privatum aedificium aut agrum fluentem ademerunt; et quae in loca publica inaedificata immolitave privati habebant, intra dies triginta demoliti sunt. opera deinde facienda ex decreta in eam rem pecunia, lacus sternendos lapide, detergendasque qua opus esset cloacas, in Aventino et in aliis partibus, qua nondum erant, faciendas locaverunt. et separatim Flaccus molem ad Neptunias aquas, ut iter populo esset, et viam per Formianum montem, Cato atria duo Maenium et Titium in lautumiis, et quattuor tabernas in publicum emit, basilicamque ibi fecit, quae Porcia appellata est. et vectigalia summis pretiis, ultro tributa infimis locaverunt. quas locationes cum senatus precibus et lacrimis publicanorum victus induci et de integro locari iussisset, censores, edicto summotis ab hasta qui ludificati priorem locationem erant, omnia eadem paulum imminutis pretiis locaverunt. nobilis censura fuit simultatiumque plena, quae M. Porcium, cui acerbitas ea adsignabatur, per omnem vitam exercuerunt.

LIVIVS XXXIX 44.

3. manebat nihilo minus quaedam imago rei publicae. nam inter Vibullium praetorem et plebei tribunum Antistium ortum certamen, quod immodestos fautores histrionum et a praetore in vincla ductos tribunus omitti iussisset. conprobavere patres, incusata Antistii licentia. simul prohibiti tribuni ius praetorum et consulum praeripere aut vocare ex Italia cum quibus lege agi posset. addidit L. Piso designatus consul, ne quid intra domum pro potestate adverterent, neve multam ab iis dictam quaestores aerarii in publicas tabulas ante quattuor menses referrent: medio temporis contra dicere liceret, deque eo consules statuerent. cohibita artius et aedilium potestas statutumque quantum curules, quantum plebei pignoris caperent vel poenae inrogarent. et Helvidius Priscus tribunus plebei adversus Obultronium Sabinum aerarii quaestorem contentiones proprias exercuit, tamquam ius hastae adversus inopes inclementer augeret.

TACITUS *Ann.* XIII 28.

4. exigis a me frequentiores epistulas: rationes conferamus: solvendo non eris. convenerat quidem, ut tua priora essent: tu scriberes, ego rescriberem. sed non ero difficilis: bene credi tibi scio. itaque in antecessum dabo, nec faciam, quod Cicero, vir disertissimus, facere Atticum iubet, ut, etiamsi rem nullam habebit, quod in buccam venerit, scribat. numquam potest deesse, quod scribam, ut omnia illa, quae Ciceronis implent epistulas, transeam: quis candidatus laboret; quis alienis, quis suis viribus pugnet; quis consulatum fiducia Caesaris, quis Pompeii, quis arcae petat; quam durus sit fenerator Caecilius, a quo minoris centesimis propinqui nummum movere non possint: sua satius est mala quam aliena tractare, se excutere et videre, quam multarum rerum candidatus sit, et non suffragari. hoc est, mi Lucili, egregium, hoc securum ac liberum, nihil petere et tota fortunae comitia transire. quam putas esse iucundum tribubus vocatis, cum candidati in templis suis pendeant et alius nummos pronuntiet, alius per sequestrem agat, alius eorum manus osculis conterat, quibus designatus contingendam manum negaturus est, omnes adtoniti vocem praeconis expectent, stare otiosum et spectare illas nundinas nec ementem quicquam nec vendentem?

SENECA *Epist.* XX. i. 1—3.

5. quod ut adeptus est, altiora iam meditans et spei plenus nullum largitionis aut officiorum in quemquam genus publice privatimque omisit. forum de manubiis incohavit, cuius area super sestertium milies constitit. munus populo epulumque pronuntiavit in filiae memoriam, quod ante eum nemo. quorum ut quam maxima expectatio esset, ea quae ad epulum pertinerent, quamvis macellariis ablocata, etiam domesticatim apparabat. gladiatores notos, sicubi infestis spectatoribus dimicarent, vi rapiendos reservandosque mandabat. tirones neque in ludo neque per lanistas, sed in domibus per equites Romanos atque etiam per senatores armorum peritos erudiebat, precibus enitens, quod epistulis eius ostenditur, ut disciplinam singulorum susciperent ipsique dictata exercentibus darent. ad retinendam autem Pompei necessitudinem ac voluntatem Octaviam sororis suae neptem, quae Gaio Marcello nupta erat, condicionem ei detulit, sibi quoque filiam eius in matrimonium petit, Fausto Sullae destinatam. omnibus vero circa eum atque etiam parte magna senatus gratuito aut levi fenore obstrictis, ex reliquo quoque ordinum genere vel invitatos vel sponte ad se commeantis uberrimo congiario prosequabatur, libertos insuper servulosque cuiusque, prout domino patronove gratus qui esset. tum reorum aut obaeratorum aut prodigae iuventutis subsidium unicum ac promptissimum erat, nisi quos gravior criminum vel inopiae luxuriaeve vis urgeret, quam ut subveniri posset a se; his plane palam bello civili opus esse dicebat.

SUETONIUS *Iulius* 26, 27.

THURSDAY, 28 May, 1885. 9 to 12 A.M.

For GREEK PROSE :

I. It might well have been expected, that the ten Captains, who jointly had command in chief over the Athenian fleet, should for that good day's service and so happy a victory, have received great honour of their Citizens. But contrariwise they were forth-with called home and accused, as if wilfully they had suffered many of the Citizens, whose ships were broken, to be cast away, when by appointing some Vessels to take them up, they might have saved them from being drowned. Hereto the Captains made a very just answer: That they pursuing the victory, had left part of the fleet to save those that were wracked; which if it were not well accomplished, it was because a tempest had hindered the performance of that, and other their intendments. This excuse availed not: For a lewd fellow was brought forth who said, that he himself, escaping in a meale-tubbe, had been intreated by those who were in peril of drowning, to desire of the people revenge of their deaths upon the Captains. It was strange that, upon such an accusation maintained with so slender evidence, men that had well deserved of their Country should be overthrowne. But their enemies had so incensed the multitude, that no man durst absolve them, save only Socrates the Philosopher, whose voice in this judgement was not regarded. Sixe of them were put to death, of whom one had hardly escaped drowning; but the Captains who were absent escaped.

RALEIGH, *Historie of the World*.

II. You remember that in the beginning of this American war you were greatly divided; and a very strong body, if not the strongest, opposed itself to the madness which every art and every power were employed to render popular, in order that the errors of the rulers might be lost in the general blindness of the nation. This opposition continued until after our great but most unfortunate victory at Long Island. Then all the mounds and banks of our constancy were borne down at once; and the phrenzy of the American war broke in upon us like a deluge. This victory, which seemed to put an immediate end to all difficulties, perfected in us that spirit of domination which our unparalleled prosperity had too long nurtured. We had been so very powerful and so very prosperous, that even the humblest of us were degraded into the vices and follies of kings. We lost all measure between means and ends; and our headlong desires became our politics and our morals. All men who wished for peace or retained any sentiments of moderation were overborne or silenced, and this city was led by every artifice to distinguish itself by its zeal for that fatal cause.

BURKE

THURSDAY, 28 May, 1885. 1.30 to 4.30 P.M.

TRANSLATE into English Prose with short marginal notes:

1. PISTOCLERVS. LVDVS.
 Pl. omitte, Lude, ac caue malo. Lv. quid caue malo?
 o barathrum, ubi's nunc? ut ego te ussurpem lubena.
 uiuo iam nimio multo plus quam uolueram.
 uixisse nimio satiust iam quam uiuere.
 magistron quemquam discipulum minitarius?
 Pl. iam excessit mi aetas ex magisterio tuo.
 Lv. nil moro discipulos mihi esse plenos sanguinis:
 ualens adfictet me uociuom uirium.
 Pl. fiam, ut ego opinor, Hercules, tu autem Linus.
 Lv. pol metuo magis ne Phoenix tuis factis fuam
 teque ad patrem esse mortuom renuntiem.
 Pl. satis historiarumst. Lv. hic uereri perdidit:
 occissus hic homost. ecquid in mentemst tibi
 patrem tibi esse? Pl. tibi ego an tu mihi seruos es?
 Lv. compendium edepol haut aetati optabile
 fecisti, quom istanc nactu's inpudentiam.
 peior magister te istaec docuit, non ego.
 nimio's tu ad istas res discipulus docilior
 quam ad illa quae te docui, ubi operam perdidisti.
 edepol fecisti furtum in aetatem malum,
 quom istaec flagitia me oclauisti et patrem.
 PLAUT. *Bacchides* 147—167.
2. nunc qui fiat uti passus proferre queamus,
 cum uolumus, uarieque datum sit membra mouere,
 et quae res tantum hoc oneris protrudere nostri
 corporis insuerit, dicam: tu percipe dicta.
 dico animo nostro primum simulacra meandi
 accidere atque animum pulsare, ut diximus ante.
 inde uoluntas fit: neque enim facere incipit ullam
 rem quisquam, quam mens prouidit quid uelit ante.
 id quod prouidet, illius rei constat imago.
 ergo animus cum sese ita commouet ut uelit ire
 inque gredi, ferit extemplo quae in corpore toto,
 per membra atque artus, animai dissita uis est:
 et facilest factu, quoniam coniuncta tenetur.
 inde ea proporro corpus ferit, atque ita tota
 paulatim moles protruditur atque mouetur.
 praeterea tum rarescit quoque corpus, et aer,
 scilicet, ut debet qui semper mobilis extat,
 per patefacta uenit penetratque foramina largus,
 et dispargitur ad partis ita quasque minutas
 corporis. hic igitur rebus fit utrimque duabus,
 corpus ut ad nauis uelis uentoque feratur.
 LUCRET. IV 877—897.
3. saepe sub immotis praeseptibus aut mala tactu
 uipera delituit caelumque exterrita fugit,
 aut tecto adsuetus coluber succedere et umbrae,
 pestis acerba boum, pecorique aspergere uirus,
 fouit humum. cape saxa manu, cape robora, pastor,
 tollentemque minas et sibila colla tumentem
 deice. iamque fuga timidum caput abdidit alte,

cum medii nexus extremaeque agmina caudae
 soluuntur, tardosque trahit sinus ultimus orbis.
 est etiam ille malus Calabris in saltibus anguis,
 squamea conuoluens sublato pectore terga
 atque notis longam maculosus grandibus aluom,
 qui, dum amnes ulli rumpuntur fontibus et dum
 uere madent udo terrae ac pluuiaribus austris,
 stagna colit, ripisque habitans sibi piscibus atram
 improbus ingluuiem ranisque loquacibus explet;
 postquam exusta palus, terraeque ardore dehiscunt,
 exsilit in siccum, et flammantia lumina torquens
 saeuit agris asperque siti atque exterritus aestu.

VERGIL. *Georgic* III 416—434.

4. cultor et antistes doctorum sancte uirorum,
 qui facis ingenio semper, amice, meo!
 ecquid, ut incolumem quondam celebrare solebas,
 nunc quoque, ne uidear totus abesse, caues?
 suscipis exceptis ecquid mea carmina solis
 artibus, artifice quae nocuere suo?
 immo ita fac, quaeso, uatum studiose nouorum
 quaque potes, retine corpus in urbe meum.
 est fuga dicta mihi, non est fuga dicta libellis,
 qui domini poenam non meruere sui.
 saepe per externas profugus pater exulat oras,
 urbe tamen natis exulis esse licet.
 Palladis exemplo de me sine matre creata
 carmina sunt. stirps haec progeniesque mea est.
 hanc tibi commendo. quae quo magis orba parente,
 hoc tibi tutori sarcina maior erit.
 tres mihi sunt nati contagia nostra secuti:
 cetera fac curae sit tibi turba palam.

OVID. *Trist.* III 14. 1—18.

5. et quando uberior uitiorum copia? quando
 maior auaritiae patuit sinus? alea quando
 hos animos? neque enim oculis comitantibus itur
 ad casum tabulae, posita sed luditur arca.
 proelia quanta illic dispensatore uidebis
 armigero! simplexne furor sestertia centum
 perdere et horrenti tunicam non reddere seruo?
 quis totidem erexit uillas, quis fercula septem
 secreto cenauit auus? nunc sportula primo
 limine parua sedet, turbae rapienda togatae:
 ille tamen faciem prius inspicit et trepidat, ne
 suppositus uenias ac falso nomine poscas.
 agnitus accipies; iubet a praecone uocari
 ipsos Troiugenas; nam uexant limen et ipsi
 nobiscum: da praetori, da deinde tribuno!
 sed libertinus prior est: prior, inquit, ego adsum:
 cur timeam dubitemue locum defendere, quamuis
 natus ad Euphraten, molles quod in aure fenestrae
 arguerint, licet ipse negem? sed quinque tabernae
 quadringenta parant; quid confert purpura maior
 optandum, si Laurenti custodit in agro
 conductas Coruinus oues, ego possideo plus
 Pallante et Licinis?

JUVENAL. I 87—109.

FRIDAY, 29 *May*, 1885. 9 to 12 A.M.

For LATIN HEXAMETERS:

Under a loose string
 Rattles a quiver; and invisibly
 Hath flown an arrow, and a shout succeeds:
 No voices answer it. One listens, groans,
 Calls for his foe; but calls not any God's
 Or any mortal's aid; he raves and rests
 Upon his elbow. Back thro' the soft sands
 They from their ambush hasten, for no shield,
 No helmet had they taken, no defence.
 Below his knee the arrow has transfixt
 The pulp, and hindered all pursuit; in vain
 Strove he to tear it out; his vigorous arm
 Could only break the arrow; blood flowed hot
 Where he would wrench it.

All night thro', he roll'd
 His heavy eyes; he saw the lamps succeed
 Each other in the city far below,
 He saw them in succession dim and die.
 In the fresh morn, when iron light awakes
 The gentle cattle from their brief repose,
 His menials issue thro' the nearer fields
 And groves adjacent to explore their lord.

LANDOR. *Death of Paris and Oenone.*

For LATIN ELEGIACS:

If this great world of joy and pain
 Revolve in one sure track;
 If freedom, set, will rise again,
 And virtue, flown, come back;
 Woe to the purblind crew who fill
 The heart with each day's care;
 Nor gain, from past or future, skill
 To bear, and to forbear.

WORDSWORTH.

FRIDAY, 29 May, 1885. 1.30 to 4.30 P.M.

TRANSLATE with short marginal notes:

1. ἴσον ἐκείνο ὃ βασιλεὺ παρ' ἐμοὶ κέκριται, φρονέειν τε εὖ καὶ τῷ λέγοντι χρηστὰ ἐθέλειν πείθεσθαι, τὰ σὲ καὶ ἀμφοτέρω περὶ ἡκούοντα ἀνθρώπων κακῶν ὁμιλίας σφάλλουσι, κατὰ περ τὴν πάντων χρησιμωτάτην ἀνθρώποισι θάλασσαν πνεύματά φασι ἀνέμων ἐμπύπτοντα οὐ περιορᾶν φύσι τῇ ἐωυτῆς χρᾶσθαι. ἐμὲ δὲ ἀκούσαντα πρὸς σεὺ κακῶς οὐ τοσοῦτο ἔδακε λύπη, ὅσον γνωμῶν δύο προκειμένων Πέρσῃσι, τῆς μὲν ὕβριν αὐξανούσης, τῆς δὲ καταπανούσης καὶ λεγούσης ὡς κακὸν εἶη διδάσκειν τὴν ψυχὴν πλέον τι διζῆσθαι αἰεὶ ἔχειν τοῦ παρεόντος, τοιούτων προκειμένων γνωμῶν ὅτι τὴν σφαλερωτέραν σεωυτῷ τε καὶ Πέρσῃσι ἀναιρέο. νῦν ὦν, ἐπειδὴ τέτραψαι ἐπὶ τὴν ἀμείνω, φῆς τοι μετιέντι τὸν ἐπ' Ἑλλήνας στόλον ἐπιφοιτᾶν ὄνειρον θεοῦ τινὸς πομπῇ, οὐκ ἐώντά σε καταλύειν τὸν στόλον. ἀλλ' οὐδὲ ταῦτά ἐστι ὃ παῖ θεία· ἐνύπνια γὰρ τὰ ἐς ἀνθρώπους πεπλανημένα τοιαῦτά ἐστι, οἷα σὲ ἐγὼ διδάξω, ἔτεσι σεὺ πολλοῖσι πρεσβύτερος ἐὼν· πεπλανῆσθαι αὐταὶ μάλιστα ἐώθασιν αἱ ὄψεις τῶν ὀνειράτων, τὰ τις ἡμέρης φροντίζει· ἡμεῖς δὲ τὰς πρὸ τοῦ ἡμέρας ταύτης τὴν στρατηλασίην καὶ τὸ κάρτα εἶχομεν μετὰ χεῖρας. εἰ δὲ ἄρα μή ἐστι τοῦτο τοιοῦτο, οἷον ἐγὼ διαίρω, ἀλλὰ τι τοῦ θεοῦ μετέχον, σὺ πᾶν αὐτὸ συλλαβὼν εἴρηκας· φανήτω γὰρ δὴ καὶ ἐμοί, ὡς καὶ σοί, διακελευόμενον.

HERODOTUS VII 16.

2. ἐκ δὲ τῶν εἰρημένων τεκμηρίων ὅμως τοιαῦτα ἂν τις νομίζων μάλιστα ἂ διήλθον οὐχ ἁμαρτάνοι, καὶ οὔτε ὡς ποιηταὶ ὑμνήκασιν περὶ αὐτῶν ἐπὶ τὸ μείζον κοσμοῦντες μᾶλλον πιστεύων, οὔτε ὡς λογογράφοι ξυνέθεσαν ἐπὶ τὸ προσαγωγότερον τῇ ἀκρόασει ἢ ἀληθέστερον, ὅντα ἀνεξέλεγκτα καὶ τὰ πολλὰ ὑπὸ χρόνου αὐτῶν ἀπίστως ἐπὶ τὸ μυθῶδες ἐκνευικηκότα, εὐρήσθαι δὲ ἡγήσάμενος ἐκ τῶν ἐπιφανεστάτων σημείων ὡς παλαιὰ εἶναι ἀποχρώντως. καὶ ὁ πόλεμος οὗτος, καίπερ τῶν ἀνθρώπων ἐν ᾧ μὲν ἂν πολεμῶσι τὸν παρόντα αἰὲ μέγιστον κρινόντων, πανσαμένων δὲ τὰ ἀρχαῖα μᾶλλον θαυμαζόντων, ἀπ' αὐτῶν τῶν ἔργων σκοποῦσι δηλώσει ὅμως μείζων γεγεννημένος αὐτῶν. καὶ ὅσα μὲν λόγῳ εἶπον ἕκαστοι ἢ μέλλοντες πολεμήσειν ἢ ἐν αὐτῷ ἤδη ὄντες, χαλεπὸν τὴν ἀκρίβειαν αὐτῇ τῶν λεχθέντων διαμνημονεύσαι ἦν ἐμοί τε ὦν αὐτὸς ἤκουσα καὶ τοῖς ἄλλοθεν ποθεν ἐμοὶ ἀπαγγέλλουσιν· ὡς δ' ἂν ἐδόκουν ἐμοὶ ἕκαστοι περὶ τῶν αἰὲ παρόντων τὰ δέοντα μάλιστ' εἰπεῖν, ἐχομένῳ ὅτι ἐγγύτατα τῆς ξυμπάσης γνώμης τῶν ἀληθῶς λεχθέντων, οὕτως εἴρηται· τὰ δ' ἔργα τῶν πραχθέντων ἐν τῷ πολέμῳ οὐκ ἐκ τοῦ παρατυχόντος πυνθανόμενος ἡξίωσα γράφειν οὐδ' ὡς ἐμοὶ ἐδόκει, ἀλλ' οἷς τε αὐτὸς παρῆν καὶ παρὰ τῶν ἄλλων ὅσον δυνατόν ἀκριβεῖα περὶ ἐκάστου ἐπεξελθών. ἐπιπόνως δὲ εὐρίσκετο, διότι οἱ παρόντες τοῖς ἔργοις ἐκάστοις οὐ ταῦτα περὶ τῶν αὐτῶν ἔλεγον, ἀλλ' ὡς ἐκατέρων τις εὐνοίας ἢ μνήμης ἔχοι. καὶ ἐς μὲν ἀκρόασιν ἴσως τὸ μὴ μυθῶδες αὐτῶν ἀτερπέστερον φανεῖται· ὅσοι δὲ βουλήσονται τῶν τε γενομένων τὸ σαφὲς σκοπεῖν καὶ τῶν μελλόντων ποτὲ αὖθις κατὰ τὸ ἀνθρώπειον τοιούτων καὶ παραπλησιῶν ἔσεσθαι, ὠφέλιμα κρίνειν αὐτὰ ἀρκούντως ἔξει, κτῆμά τε ἐς αἰὲ μᾶλλον ἢ ἀγώνισμα ἐς τὸ παραχρήμα ἀκούειν ξύγκειται.

THUCYDIDES I 21, 22.

3. ΠΡΩΤΑΡΧΟΣ. ἤκουον μὲν ἔγωγε, ὦ Σώκρατες, ἐκάστοτε Γοργίου πολλάκις, ὡς ἢ τοῦ πείθειν πολὺ διαφέρει πασῶν τεχνῶν· πάντα γὰρ ὑφ' αὐτῇ δοῦλα δι' ἐκόντων ἀλλ' οὐ διὰ βίας ποιοῖτο, καὶ μακρῷ ἀρίστη πασῶν εἴη τῶν τεχνῶν· νῦν δ' οὔτε σοὶ οὔτε δὴ ἐκείνῳ βουλοίμην ἂν ἐναντία τίθεσθαι. ΣΩΚΡΑΤΗΣ. τὰ ὅπλα μοι δοκεῖς βουλευθεὶς εἰπεῖν αἰσχυνοὺς ἀπολιπεῖν. ΠΡΩ. ἔστω νῦν ταῦτα ταύτῃ, ὅπῃ σοι δοκεῖ. ΣΩ. ἀρ' οὖν αἴτιος ἐγὼ τοῦ μὴ καλῶς ὑπολαβεῖν σε; ΠΡΩ. τὸ ποῖον; ΣΩ. οὐκ, ὦ φίλε Πρώταρχε, τοῦτο ἔγωγε ἐζήτουν πῶ, τίς τέχνη ἢ τίς ἐπιστήμη πασῶν διαφέρει τῷ μεγίστῃ καὶ ἀρίστῃ καὶ πλείστα ὠφελοῦσα ἡμᾶς, ἀλλὰ τίς ποτε τὸ σαφές καὶ τὰκριβές καὶ τὸ ἀληθέστατον ἐπισκοπεῖ, κἂν εἰ σμικρὰ καὶ σμικρὰ ὀνινᾶσα, τοῦτ' ἔστιν ὃ νῦν δὴ ζητοῦμεν. ἀλλ' ὅρα· οὐδὲ γὰρ ἀπεχθήσει Γοργίᾳ, τῇ μὲν ἐκείνου ὑπάρχειν τέχνη διδούς πρὸς χρεῖαν τοῖς ἀνθρώποις κρατεῖν, ἢ δ' εἶπον ἐγὼ νῦν πραγματεία, καθάπερ τοῦ λευκοῦ περὶ τότε ἔλεγον, κἂν εἰ σμικρόν, καθαρὸν δὲ εἴη, τοῦ πολλοῦ καὶ μὴ τοιούτου διαφέρειν τούτῳ γ' αὐτῷ τῷ ἀληθεστάτῳ, καὶ νῦν δὴ σφόδρα διανοηθέντες καὶ ἰκανῶς διαλογισάμενοι, μήτ' εἰς τινὰς ὠφελείας ἐπιστημῶν βλέψαντες μήτε τινὰς εὐδοκίμιας, ἀλλ' εἰ τις πέφυκε τῆς ψυχῆς ἡμῶν δύναμις ἐρᾶν τε τοῦ ἀληθοῦς καὶ πάντα ἕνεκα τούτου πράττειν, ταύτην εἴπωμεν, διερευνησάμενοι τὸ καθαρὸν νοῦ τε καὶ φρονήσεως, εἰ ταύτην μάλιστα ἐκ τῶν εἰκότων ἐκτῆσθαι φαῖμεν ἂν ἢ τινα ἑτέραν ταύτης κυριωτέραν ἡμῖν ζητητέον.

PLATO *Philebus* 58 A—D.

4. τί γὰρ δήποτε, Εὐβουλε, Ἡγησίλεω μὲν κρινομένῳ, ὃς ἀνεψιός ἐστί σοι, καὶ Θρασυβούλῳ πρῶν, τῷ Νικηράτου θείῳ, ἐπὶ μὲν τῆς πρώτης ψήφου οὐδ' ὑπακοῦσαι καλούμενος ἤθελες, εἰς δὲ τὸ τίμημα ἀναβὰς ὑπὲρ μὲν ἐκείνων οὐδ' ὅτιοῦν ἔλεγες, ἐδέου δὲ τῶν δικαστῶν συγγνώμην ἔχειν σοι; εἰτα ὑπὲρ μὲν συγγενῶν καὶ ἀναγκαίων ἀνθρώπων οὐκ ἀναβαίνεις, ὑπὲρ Αἰσχίνου δὲ ἀναβήσῃ, ὃς, ἡνίκ' ἔκρινεν Ἀριστοφῶν Φιλόνεικον καὶ δι' ἐκείνου τῶν σοι πεπραγμένων κατηγορεῖ, συγκατηγορεῖ μετ' ἐκείνου σου καὶ τῶν ἐχθρῶν τῶν σῶν εἰς ἐξητάζετο. ἐπειδὴ δὲ σὺ μὲν τουτουσὶ δεδιξάμενος καὶ φήσας καταβαίνειν εἰς Πειραιᾶ δεῖν ἤδη καὶ χρήματ' εἰσφέρειν καὶ τὰ θεωρικὰ στρατιωτικὰ ποιεῖν, ἢ χειροτονεῖν ἂ συνεῖπε μὲν οὗτος, ἔγραψε δ' ὁ βδελυρὸς Φιλοκράτης, ἐξ ὧν αἰσχροὶ ἀντὶ καλῆς συνέβη γενέσθαι τὴν εἰρήνην, οὗτοι δὲ τοῖς μετὰ ταῦτ' ἀδικήμασι πάντ' ἀπολωλέκασιν, τηνικαῦτα διήλλαξαι; καὶ ἐν μὲν τῷ δήμῳ κατηρῶ Φιλίππῳ, καὶ κατὰ τῶν παίδων ὤμνυες ἢ μὴν ἀπολωλέναι Φίλιππον ἂν βούλεσθαι· νῦν δὲ βοηθήσεις τούτῳ; πῶς οὖν ἀπολείται, ὅταν τοὺς παρ' ἐκείνου δωροδοκοῦντας σὺ σώζῃς; τί γὰρ δήποτε Μοιροκλέα μὲν ἔκρινες, εἰ παρὰ τῶν τὰ μέταλλα ἐωνημένων εἴκοσιν ἐξέλεξε δραχμὰς παρ' ἐκάστου, καὶ Κηφισοφῶντα γραφὴν ἱερῶν χρημάτων ἐδίωκες, εἰ τρισὶν ὕστερον ἡμέραις ἐπὶ τὴν τράπεζαν ἔθηκεν ἐπτά μνᾶς· τοὺς δὲ ἔχοντας, ὁμολογούντας, ἐξελεγχομένους ἐπ' αὐτοφώρῳ ἐπὶ τῷ τῶν συμμάχων ὀλέθρῳ ταῦτα πεποιήκοτας, τούτους οὐ κρίνεις, ἀλλὰ καὶ σώζειν κελεύεις;

DEMOSTHENES *de Falsa Legatione* §§ 332—335.

SATURDAY, 30 May, 1885: 9 to 12 A.M.

TRANSLATE into English Prose, with short marginal notes:

1. τὸ δὲ μᾶλλον ἐπαινεῖν τὸ ἀπρακτεῖν τοῦ πράττειν οὐκ ἀληθές· ἡ γὰρ εὐδαιμονία πρᾶξις ἐστίν· ἔτι δὲ πολλῶν καὶ καλῶν τέλος ἔχουσιν αἱ τῶν δικαίων καὶ σωφρόνων πράξεις. καίτοι τάχ' ἂν ὑπολάβοι τις τούτων οὕτω διωρισμένων, ὅτι τὸ κύριον εἶναι πάντων ἄριστον· οὕτω γὰρ ἂν πλείστων καὶ καλλίστων κύριος εἴη πράξεων· ὥστε οὐ δεῖ τὸν δυνάμενον ἀρχειν παρίεναι τῷ πλησίον, ἀλλὰ μᾶλλον ἀφαιρεῖσθαι, καὶ μήτε πατέρα παίδων μήτε παῖδας πατρὸς μήθ' ὅλως φίλον φίλου μηθένα ὑπολογίζειν, μηδὲ πρὸς τοῦτο φροντίζειν· τὸ γὰρ ἄριστον αἰρετώτατον, τὸ δ' εὖ πράττειν ἄριστον. τοῦτο μὲν οὖν ἀληθῶς ἴσως λέγουσιν, εἴπερ ὑπάρξει τοῖς ἀποστεροῦσι καὶ βιαζομένοις τὸ τῶν ὄντων αἰρετώτατον. ἀλλ' ἴσως οὐχ οἷόν τε ὑπάρχειν, ἀλλ' ὑποτίθενται τοῦτο ψεῦδος. οὐ γὰρ ἔτι καλὰς τὰς πράξεις ἐνδέχεται εἶναι τῷ μὴ διαφέροντι τοσοῦτον, ὅσον ἀνὴρ γυναικὸς ἢ πατήρ τέκνων ἢ δεσπότης δούλων· ὥστε ὁ παραβαίνων οὐθὲν ἂν τηλικούτον κατορθώσειεν ὕστερον, ὅσον ἤδη παρεκβέβηκε τῆς ἀρετῆς. τοῖς γὰρ ὁμοίοις τὸ καλὸν καὶ τὸ δίκαιον ἐν τῷ ἐν μέρει· τοῦτο γὰρ ἴσον καὶ ὁμοιον· τὸ δὲ μὴ ἴσον τοῖς ἴσοις καὶ τὸ μὴ ὁμοιον τοῖς ὁμοίοις παρὰ φύσιν· οὐδὲν δὲ τῶν παρὰ φύσιν καλόν. διὸ κἂν ἄλλος τις ἢ κρείττων κατ' ἀρετὴν καὶ κατὰ δύναμιν τὴν πρακτικὴν τῶν ἀρίστων, τούτῳ καλὸν ἀκολουθεῖν καὶ τούτῳ πείθεσθαι δίκαιον. δεῖ δ' οὐ μόνον ἀρετὴν, ἀλλὰ καὶ δύναμιν ὑπάρχειν, καθ' ἣν ἔσται πρακτικός. ἀλλ' εἰ ταῦτα λέγεται καλῶς, καὶ τὴν εὐδαιμονίαν εὐπραγίαν θετέον, καὶ κοινὴ πάσης πόλεως ἂν εἴη καὶ καθ' ἕκαστον ἄριστος βίος ὁ πρακτικός.

ARISTOT. *Pol.* Δ (H) 3 1325 a.

2. κωφὸς ἀνὴρ τις, ὃς Ἡρακλεῖ στόμα μὴ περιβάλλει,
μηδὲ Διρκαίων ὑδάτων ἀεὶ μέμνεται, τὰ νιν θρέψαντο καὶ Ἰφικλέα
τοῖσι τέλειον ἐπ' εὐχᾷ κωμάσομαί τι παθὼν ἐσλόν. Χαρίτων κελαδενῶν
μή με λίποι καθαρὸν φέγγος. Αἰγίνα τε γὰρ
φαμὶ Νίσου τ' ἐν λόφῳ τρεῖς δὴ πόλιν τάνδ' εὐκλείξει,
σιγαλὸν ἀμαχανίαν ἔργῳ φηγών·
οὐνεκεν, εἰ φίλος ἀστῶν, εἴ τις ἀντάεις, τό γ' ἐν ξυνῷ πεπονημένον εὖ
μὴ λόγον βλάπτων ἀλίοιο γέροντος κρυπτέτω.
κεῖνος αἰνεῖν καὶ τὸν ἐχθρόν
παντὶ θυμῷ σύν γε δίκᾳ καλὰ ῥέζοντ' ἔννεπεν.
πλείστα νικάσαντά σε καὶ τελεταῖς
ῥρίαις ἐν Παλλάδος εἶδον ἄφωνοι θ' ὥς ἐκάστα φίλτατον
παρθενικαὶ πόσιν ἢ
υἱὸν εὐχοντ', ὃ Τελεσίκρατες, ἔμμεν,
ἐν Ὀλυμπίοισι τε καὶ βαθυκόλπου
Γᾶς ἀέθλοισι ἐν τε καὶ πᾶσιν
ἐπιχωρίοις. ἐμὲ δ' ὦν τις ἀοιδῶν
δίψαν ἀκειόμενον πρᾶσσει χρέος αὐτὶς ἐγειραι
καὶ τεῶν δόξαν παλαιῶν προγόνων· οἳ Λιβύσσης ἀμφὶ γυναικὸς ἔβαν
Ἰρᾶσα πρὸς πόλιν, Ἀνταίου μετὰ καλλίκομον μναστήρες ἀγακλέα κούραν.

PINDAR *Pyth.* IX 87—106.

3. sed sunt tamen perabsurdi et ei, qui cum scientia vivere ultimum bonorum, et qui nullam rerum differentiam esse dixerunt, atque ita sapientem beatum fore, nihil aliud alii momento ullo anteponentem, et qui, ut quidam Academici constituisse dicuntur, extremum bonorum et summum munus esse sapientis, obsistere visis adsensusque suos firme sustinere. his singulis copiose responderi solet, sed quae perspicua sunt, longa esse non debent. quid autem apertius quam, si selectio nulla sit ab eis rebus, quae contra naturam sint, earum rerum, quae sint secundum naturam, fore ut tollatur omnis ea, quae quaeratur laudeturque, prudentia? circumscriptis igitur eis sententiis, quas posui, et eis, si quae similes earum sunt, relinquitur ut summum bonum sit vivere scientiam adhibentem earum rerum, quae natura eveniant, seligentem quae secundum naturam et quae contra naturam sint reicientem, id est, convenienter congruenterque naturae vivere. sed in ceteris artibus cum dicitur *artificiose*, posterum quodam modo et consequens putandum est, quod illi *ἐπιγεννηματικὸν* appellant: cum autem in quo *sapienter* dicimus, id a primo rectissime dicitur. quidquid enim a sapiente proficiscitur, id continuo debet expletum esse omnibus suis partibus: in eo enim positum est id, quod dicimus esse expetendum. nam ut peccatum est patriam prodere, parentes violare, fana depeculari, quae sunt in effectum, sic timere, sic maerere, sic in lubricum esse peccatum est etiam sine effectu. verum ut haec non in posteris et in consequentibus, sed in primis continuo peccata sunt, sic ea, quae proficiscuntur a virtute, susceptione prima, non perfectione recta sunt iudicanda.

CICERO *de Finibus* III 31, 32.

4. quacumque libido est,
 incedo solus, percontor quanti holus ac far,
 fallacem circum vespertinumque pererro
 saepe forum, adsisto divinis, inde domum me
 ad porri et ciceris refero laganique catinum;
 cena ministratur pueris tribus, et lapis albus
 pocula cum cyatho duo sustinet, adstat echinus
 vilis, cum patera guttus, Campana supellex.
 deinde eo dormitum, non sollicitus, mihi quod cras
 surgendum sit mane, obeundus Marsya, qui se
 voltum ferre negat Noviorum posse minoris.
 ad quartam iaceo; post hanc vagor aut ego lecto
 aut scripto quod me tacitum iuvet, unguor olivo,
 non quo fraudatis inmundus Natta lucernis.
 ast ubi me fessum sol acrior ire lavatum
 admonuit, fugio campum lusumque trigonem.
 pransus non avide, quantum interpellet inani
 ventre diem durare, domesticus otior. haec est
 vita solutorum misera ambitione gravique.
 his me consolor victurum suavius ac si
 quaestor avus pater atque meus patruusque fuisset.

HORAT. *Serm.* I 6 111—131.

5. sportula nulla datur; gratis conviva recumbis:
 dic mihi, quid Romae, Gargiliane, facis?
 unde tibi togula est et fuscae pensio cellae?
 unde datur quadrans? unde vir es Chiones?
 cum ratione licet dicas te vivere summa,
 quod vivis, nulla cum ratione facis.

MARTIAL III 30.

CLASSICAL TRIPOS.

PART II.

SECTION A.

MONDAY, *June 1*, 1885. 9—12 A.M.

TRANSLATE into GREEK PROSE:

1. There, my dear, cries Booth, I knew what opinion the doctor would be of. Nay, I am certain there is not a wise man in the kingdom who would say otherwise.

Don't abuse me, young gentleman, said the doctor, with appellations I don't deserve.

I abuse you, my dear doctor? cries Booth.

Yes, my dear sir, answered the doctor; you insinuated slyly that I was wise, which, as the world understands the phrase, I should be ashamed of; and my comfort is that no one can accuse me justly of it: I have just given an instance of the contrary, by throwing away my advice.

I hope, sir, cries Booth, that will not be the case.

Yes, sir, answered the doctor, I know it will be the case in the present instance; for either you will not go at all, or my little turtle here will go with you.

You are in the right, doctor, cries Amelia.

I am sorry for it, said the doctor, for then, I assure you you are in the wrong.

Indeed, cries Amelia, if you knew all my reasons, you would say they were very strong ones.

Very probably, cries the doctor: the knowledge that they are in the wrong is a very strong reason to some women to continue so.

Nay, doctor, cries Amelia, you shall never persuade me of that. I will not believe that any human being ever did an action merely because they knew it to be wrong.

I am obliged to you, my dear child, said the doctor, for declaring your resolution of not being persuaded. Your husband would never call me a wise man again, if, after that declaration, I should attempt to persuade you.

Well, I must be content, cries Amelia, to let you think as you please.

FIELDING.

2. Though umbrages and light jealousies created by cowardly fancies be too narrow to build a fair quarrel on; yet the lawfulness of a preventive warre founded on just fear, is warranted by reason and the practice of all wise nations. In such a case it is folly to do as countrey-fellows in a fense-school, never ward a blow till it be past: but it is best to be before-hand with the enemy, lest the medicine come too late for the maladie. In such dangers to play an after-game, is rather a shift then a policy: especially seeing warre is a tragedy which alwayes destroyeth the stage whereon it is acted; it is the most advised way, not to wait for the enemy, but to seek him out in his own countrey.

THOMAS FULLER.

MONDAY, June 1, 1885. 1.30—4.30.

TRANSLATE, with short notes where necessary:

1. μή τις τοῦτο πύθοιτο πόθεν τόδε νείκος ἐτύχθη·
καί κεν δὴ μέγα θαῦμα μετ' ἀθανάτοισι γένοιτο,
παῖδα νέον γεγαῶτα διὰ προθύροιο περῆσαι
βουσί μετ' ἀγραύλοισι· τὸ δ' ἀπρεπέως ἀγορεύεις.
χθές γενόμην· ἀπαλοὶ δὲ πόδες τρηχεῖα δ' ὑπο χθών.
εἰ δ' ἐθέλεις, πατὴρ κεφαλὴν μέγαν ὄρκον ὁμοῦμαι,
μή μὲν ἐγὼ μήτ' αὐτὸς ὑπίσχομαι αἴτιος εἶναι,
μήτε τιν' ἄλλον ὅπωπα βοῶν κλοπὸν ὑμετεράων,
αἵτινες αἰ βόες εἰσὶ· τὸ δὲ κλέος οἶον ἀκούω.
Ὡς ἄρ' ἔφη, καὶ πυκνὸν ἀπὸ βλεφάρων ἀμαρύσσων
ὄφρυσιν ῥιπτάζεσκεν, ὀρώμενος ἔνθα καὶ ἔνθα,
μάκρ' ἀποσυρίζων, ἄλιον τὸν μῦθον ἀκούων.
τὸν δ' ἀπαλον γελάσας προσέφη ἐκάεργος Ἀπόλλων·
Ὡ πέπον, ἡπεροπευτὰ, δολοφραδές, ἥ σε μάλ' οἶω
πολλάκις ἀντιτοροῦντα δόμους εὐναιετᾶοντας
ἐννυχον οὐχ' ἓνα μόνον ἐπ' οὐδεὶ φῶτα καθίσσαι,
σκευάζοντα κατ' οἶκον ἄτερ ψόφου, οἷ' ἀγορεύεις.
πολλοὺς δ' ἀγραύλους ἀκαχήσεις μηλοβοτῆρας
οὔρεος ἐν βήσσης, ὅπότε ἂν κρειῶν ἐρατίζων
ἀντήσης ἀγέλησι βοῶν καὶ πώεσι μῆλων.
ἀλλ' ἄγε, μή πύματόν τε καὶ ὕστατον ὕπνον ἰαύσης,
ἐκ λίκνου κατὰβαινε, μελαίνης νυκτὸς ἑταῖρε.
τοῦτο γὰρ οὖν καὶ ἔπειτα μετ' ἀθανάτοισι γέρας ἔξεις,
ἀρχὸς φηλητέων κεκλησέαι ἡματα πάντα.

Homeric Hymns, εἰς Ἑρμῆν 269.

2. XO. τί ποτε βέβηκεν, Οἰδίπους, ὑπ' ἀγρίας
ἔξασα λύπης ἢ γυνή; δέδοιχ' ὅπως
μὴ 'κ τῆς σιωπῆς τῆσδ' ἀναρρήξει κακά.
OI. ὅποια χρήζει ῥηγνύτω· τοῦμόν δ' ἐγὼ
κεῖ σμικρὸν ἐστὶ σπέρμ' ἰδεῖν βουλήσομαι.
αὕτη δ' ἴσως, φρονεῖ γὰρ ὡς γυνὴ μέγα,
τὴν δυσγένειαν τὴν ἐμὴν αἰσχύνεται.
ἐγὼ δ' ἐμαυτὸν παῖδα τῆς Τύχης νέμων
τῆς εὐ διδοίσης οὐκ ἀτιμασθήσομαι.
τῆς γὰρ πέφυκα μητρός· οἱ δὲ συγγενεῖς
μῆνές με μικρὸν καὶ μέγαν διώρισαν.
τοιῶσδε δ' ἐκφύς οὐκ ἂν ἐξέλθοιμ' ἔτι
ποτ' ἄλλος, ὥστε μὴ 'κμαθεῖν τοῦμόν γένος.
XO. εἵπερ ἐγὼ μάντις εἰμὶ καὶ κατὰ γνώμαν ἴδρις,
οὐ τὸν Ὀλυμπον ἀπείρων,
ὦ Κιβαιρῶν, †οὐκ ἔσθ' τὰν αὐριον†
πανσέληνον, μὴ οὐ σέ γε καὶ πατριώταν Οἰδίπουν
καὶ τροφὸν καὶ ματέρ' αὔξειν,
καὶ χορεύεσθαι πρὸς ἡμῶν, ὡς ἐπὶ ἡρα φέροντα τοῖς ἐμοῖς τυράννοις.
ἦϊε Φοῖβε, σοὶ δὲ ταῦτ' ἀρέστ' εἴη.
τίς σε, τέκνον, τίς σ' ἔτικτε τῶν μακραιώνων ἄρα
Πανὸς ὀρεσσιβάτα πα-
τρός πελασθεῖς; †ἦ σέ γε τις θυγάτηρ
Λοξίου;† τῷ γὰρ πλάκες ἀγρόνομοι πᾶσαι φίλαι·
εἴθ' ὁ Κυλλάνης ἀνάσσων,
εἴθ' ὁ Βακχεῖος θεὸς ναίων ἐπ' ἄκρων ὀρέων σ' εὖρημα δέξατ' ἐκ του
Νυμφᾶν Ἑλικωνίδων, αἷς πλεῖστα συμπαλίζει.

SOPHOCLES, Oedipus Tyrannus 1073.

3. ἐποίησαν δὲ καὶ ἐκκλησίαν εὐθύς οἱ στρατιῶται, ἐν ᾗ τοὺς μὲν προτέρους στρατηγούς, καὶ εἴ τινα τῶν τριηράρχων ὑπετόπενον, ἔπαυσαν, ἄλλους δὲ ἀνθεῖλοντο καὶ τριηράρχους καὶ στρατηγούς, ὧν Θρασύβουλός τε καὶ Θράσυλος ὑπῆρχον. καὶ παραινέσεις ἄλλας τε ἐποιοῦντο ἐν σφίσιν αὐτοῖς ἀνιστάμενοι, καὶ ὥς οὐ δεῖ ἀθυμεῖν ὅτι ἡ πόλις αὐτῶν ἀφέστηκε· τοὺς γὰρ ἐλάσσους ἀπὸ σφῶν τῶν πλεόνων καὶ ἐς πάντα ποριμωτέρων μεθεστάναι. ἐχόντων γὰρ σφῶν τὸ πᾶν ναυτικὸν τὰς ἄλλας πόλεις ὧν ἄρχουσιν ἀναγκάσειν τὰ χρήματα ὁμοίως διδόναι καὶ εἰ ἐκείθεν ὠρμῶντο. πόλιν τε γὰρ σφίσιν ὑπάρχειν Σάμον οὐκ ἀσθενῆ, ἀλλ' ἡ παρ' ἐλάχιστον δὴ ἦλθε τὸ Ἀθηναίων κράτος τῆς θαλάσσης, ὅτε ἐπολέμησεν, ἀφελέσθαι, τοὺς τε πολεμίους ἐκ τοῦ αὐτοῦ χωρίου ἀμύνεσθαι οὐπὲρ καὶ πρότερον. καὶ δυνατώτεροι εἶναι σφεῖς ἔχοντες τὰς ναῦς πορίζεσθαι τὰ ἐπιτήδεια τῶν ἐν τῇ πόλει. καὶ δι' ἑαυτοὺς τε ἐν τῇ Σάμῳ προκαθημένους καὶ πρότερον αὐτοὺς κρατεῖν τοῦ ἐς τὸν Πειραιᾶ ἔσπλυν, καὶ νῦν ἐς τοιοῦτον καταστήσονται μὴ βουλομένων σφίσι πάλιν τὴν πολιτείαν ἀποδοῦναι, ὥστε αὐτοὶ δυνατώτεροι εἶναι εἰργεῖν ἐκείνους τῆς θαλάσσης ἢ ὑπ' ἐκείνων εἰργεσθαι. βραχὺ τέ τι εἶναι καὶ οὐδενὸς ἄξιον, ᾧ πρὸς τὸ περιγίγνεσθαι τῶν πολεμίων ἡ πόλις σφίσι χρήσιμος ἦν, καὶ οὐδὲν ἀπολωλέκεναι, οἳ γε μήτε ἀργύριον εἶχον ἔτι πέμπειν, ἀλλ' αὐτοὶ ἐπορίζοντο οἱ στρατιῶται, μήτε βούλευμα χρηστὸν, οὐπὲρ ἔνεκα πόλις στρατοπέδων κρατεῖ. ἀλλὰ καὶ ἐν τούτοις τοὺς μὲν ἡμαρτηκέναι τοὺς πατρίους νόμους καταλύσαντας, αὐτοὶ δὲ σώζειν καὶ ἐκείνους πειράσσεσθαι προσαναγκάζειν. ὥστε οὐδὲ τούτους, οἳπὲρ ἂν βουλεύοιεν τι χρηστὸν, παρὰ σφίσι χεῖρους εἶναι. Ἀλκιβιάδην τε, ἣν αὐτῷ ἀδείαν τε καὶ κάθοδον ποιήσωσιν, ὕσμενον τὴν παρὰ βασιλέως ξυμμαχίαν παρέξειν.

THUCYDIDES, 8, 76.

4. ἄλλας δὲ καθημένας περίξ δι' ἴσου τρεῖς, ἐν θρόνῳ ἐκάστην, θυγατέρας τῆς Ἀνάγκης Μοίρας λευχειμονούσας, στέμματα ἐπὶ τῶν κεφαλῶν ἐχούσας, Λάχεσιν τε καὶ Κλωθῷ καὶ Ἄτροπον, ὑμνεῖν πρὸς τὴν τῶν Σειρήνων ἁρμονίαν, Λάχεσιν μὲν τὰ γεγονότα, Κλωθῷ δὲ τὰ ὄντα, Ἄτροπον δὲ τὰ μέλλοντα. καὶ τὴν μὲν Κλωθῷ τῇ δεξιᾷ χειρὶ ἐφαπτομένην συνεπιστρέφειν τοῦ ἀτράκτου τὴν ἔξω περιφορῶν, διαλείπουσαν χρόνον, τὴν δὲ Ἄτροπον τῇ ἀριστερᾷ τὰς ἐντὸς αὐτῶν ὡσαύτως· τὴν δὲ Λάχεσιν ἐν μέρει ἐκατέρας ἐκατέρᾳ τῇ χειρὶ ἐφάπτεσθαι. σφᾶς οὖν, ἐπειδὴ ἀφικέσθαι, εὐθύς δεῖν ἰέναι πρὸς τὴν Λάχεσιν. προφήτην οὖν τινὰ σφᾶς πρῶτον μὲν ἐν τάξει διαστήσαι, ἔπειτα λαβόντα ἐκ τῶν τῆς Λαχέσεως γονάτων κλήρους τε καὶ βίων παραδείγματα, ἀναβάντα ἐπὶ τι βῆμα ὑψηλὸν εἰπεῖν· Ἀνάγκης θυγατρὸς κόρης Λαχέσεως λόγος. ψυχαὶ ἐφήμεροι, ἀρχὴ ἄλλης περιόδου θνητοῦ γένους θανατηφόρου. οὐχ ὑμᾶς δαίμων λήξεται, ἀλλ' ὑμεῖς δαίμονα αἰρήσεσθε. πρῶτος δ' ὁ λαχὼν πρῶτος αἰρείσθω βίον, ᾧ συνέσται ἐξ ἀνάγκης. ἀρετὴ δὲ ἀδέσποτον, ἦν τιμῶν καὶ ἀτιμάζων πλέον καὶ ἑλαττον αὐτῆς ἕκαστος ἔξει. αἰτία ἐλομένου· θεὸς ἀναίτιος. ταῦτα εἰπόντα ῥίψαι ἐπὶ πάντας τοὺς κλήρους, τὸν δὲ παρ' αὐτὸν πεσόντα ἕκαστον ἀναιρεῖσθαι, πλὴν οὐ· ἔδὲ οὐκ ἔαν· τῷ δὲ ἀνελομένῳ δῆλον εἶναι, ὅπόστος εἰλήχειν. μετὰ δὲ τοῦτο αὐθις τὰ τῶν βίων παραδείγματα εἰς τὸ πρόσθεν σφῶν θεῖναι ἐπὶ τὴν γῆν, πολὺ πλείω τῶν παρόντων, εἶναι δὲ παντοδαπά· ζῶων τε γὰρ πάντων βίους καὶ δὴ καὶ τοὺς ἀνθρωπίνους ἅπαντας... ψυχῆς δὲ τάξιν οὐκ ἐνεῖναι διὰ τὸ ἀναγκαίως ἔχειν ἄλλον ἐλομένην βίον ἄλλοιαν γίγνεσθαι· τὰ δ' ἄλλα ἀλλήλοις τε καὶ πλούτοις καὶ πενίαις, τὰ δὲ νόσοις, τὰ δὲ ὑγίαις μεμῖχθαι, τὰ δὲ καὶ μεσοῦν τούτων.

PLATO, Republic 10, 617.

TUESDAY, *June 2*, 1885. 9—12.

FOR LATIN PROSE:

1. It is possible men may sometimes own rules of morality, which, in their private thoughts, they do not believe to be true, only to keep themselves in reputation and esteem amongst those, who are persuaded of their obligation. But it is not to be imagined, that a whole society of men should publickly and professedly disown and cast off a rule, which they could not, in their own minds, but be infallibly certain was a law, nor be ignorant, that all men they should have to do with, knew it to be such: and therefore must every one of them apprehend from others, all the contempt and abhorrence due to one who professes himself void of humanity; and one who, confounding the known and natural measures of right and wrong, cannot but be looked on as the professed enemy of their peace and happiness. Whatever practical principle is innate, cannot but be known to every one to be just and good. It is therefore little less than a contradiction to suppose, that whole nations of men should, both in their professions and practice, unanimously and universally give the lie to what, by the most invincible evidence, every one of them knew to be true, right, and good. This is enough to satisfy us, that no practical rule, which is any where universally, and with publick approbation or allowance, transgressed, can be supposed innate.

LOCKE.

2. The friendship of such as you are, imposes obligations. Not only ought one to be grateful, but to justify it. For this reason I wish that I could cure myself entirely of the tendency to despondency which you argue against. Your letter has helped me, and done me real good. Do not, however, think that the attack I mentioned to you was entirely due to my morbid and habitual melancholy. It especially arose from my reflections on facts only too real. As I proceed in the work in which you are so kind as to interest yourself, I find myself more and more carried away by a stream of feelings and opinions exactly opposed to those of most of my contemporaries. I still love passionately things they no longer care for. I still consider liberty the first of blessings; I still see that it is one of the most fertile sources of manly virtues and great actions. Yet I see that most of the men of my time, of the most honest among them, for I care little about the others, think only of accommodating themselves to the new system, and, what most of all disturbs and alarms me, turn a taste for slavery into a virtue. I could not think and feel as they do if I tried: an unconquerable instinct keeps me consistent.

DE TOCQUEVILLE'S *Letters*.

TUESDAY, June 2, 1885. 1.30—4.30 P.M.

TRANSLATE, with such notes as are necessary to show the meaning:

1. ut quibus id fiat rebus cognoscere possis,
 principio meminisse decet quae diximus ante,
 semina multimodis in rebus mixta teneri.
 porro omnes quaecumque cibum capiunt animantes,
 ut sunt dissimiles extrinsecus et generatim
 extima membrorum circumcaesura coercet,
 proinde et seminibus constant variante figura.
 semina cum porro distent, differre necessest
 intervalla viasque, foramina quae perhibemus,
 omnibus in membris et in ore ipsoque palato.
 esse minora igitur quaedam maioraque debent,
 esse triquetra aliis, aliis quadrata necessest,
 multa rutunda, modis multis multangula quaedam.
 namque figurarum ratio ut motusque reposcunt,
 proinde foraminibus debent differre figurae,
 et variare viae proinde ac textura coercet.
 hoc ubi quod suave est aliis aliis fit amarum,
 illi, cui suave est, levissima corpora debent
 contractabiliter caulas intrare palati,
 at contra quibus est eadem res intus acerba,
 aspera nimirum penetrant hamataque fauces.
 nunc facile est ex his rebus cognoscere quaeque,
 quippe ubi cui febris bili superante coorta est
 aut alia ratione aliquast vis excita morbi,
 perturbatur ibi iam totum corpus et omnes
 commutantur ibi positurae principiorum;
 fit prius ad sensum ut quae corpora conveniebant
 nunc non convenient, et cetera sint magis apta,
 quae penetrata queunt sensum progignere acerbum.

LUCRETIUS IV. 642—670.

2. ex ambiguo autem nascitur controversia cum quid senserit scriptor obscurum est, quod scriptum duas pluresve res significat, ad hunc modum: paterfamilias, cum filium heredem faceret, vasorum argenteorum centum pondo uxori suae sic legavit: 'heres meus uxori meae vasorum argenteorum pondo centum, quae volet, dato.' post mortem eius vasa magnifica et pretiose caelata petit a filio mater. ille se, quae ipse vellet, debere dicit. primum, si fieri poterit, demonstrandum est non esse ambigue scriptum, propterea quod omnes in consuetudine sermonis sic uti solent eo verbo uno pluribusve in ea sententia in qua is, qui dicet, accipiendum esse demonstrabit. deinde ex superiore et ex inferiore scriptura docendum id, quod quaeratur, fieri perspicuum. quare si ipsa separatim ex se verba considerentur, omnia aut pleraque ambigua visum iri. quae autem ex omni considerata scriptura perspicua fiant, haec ambigua non oportere existimari. deinde qua in sententia scriptor fuerit, ex ceteris eius scriptis, factis, dictis, animo atque vita eius sumi oportebit, et eam ipsam scripturam, in qua inerat illud ambiguum de quo quaeritur, totam omnibus ex partibus pertentare, si quid aut ad id appositum sit, quod nos interpretemur, aut ei, quod adversarius intelligat, adversetur. nam facile, quid verisimile sit eum voluisse qui scripsit, ex omni scriptura et ex persona scriptoris, atque iis rebus quae personis attributae sunt, considerabitur.

CICERO *de inventione* II. xl. 116, 117.

3. ab iis egressi quidam urbem Locrenses circumventi Regiumque abstracti fuerant. in eo captivorum numero fabri quidam fuere, adsueta apud Poenos mercede opus in arce Locrorum facere. hi cogniti ab Locrensi principibus, qui pulsi ab adversa factione, quae Hannibali Locros tradiderat, Regium se contulerant, cum cetera percunctantibus —ut mos est qui diu absunt—quae domi agerentur exposuissent, spem fecerunt, si redempti ac remissi forent, arcem se iis tradituros. ibi se habitare, fidemque sibi rerum omnium inter Carthaginienses esse. itaque ut qui simul desiderio patriae angerentur, simul cupiditate inimicos ulciscendi arderent, redemptis extemplo iis remissisque, cum ordinem agenda rei composuissent signaque, quae procul edita observarent, ipsi ad Scipionem Syracusas profecti, apud quem pars exsulum erat, referentes ibi promissa captivorum spem ab effectu haud abhorrentem consuli fecissent, tribuni militum cum iis M. Sergius et P. Matienus missi, iussique ab Regio tria milia militum Locros ducere; et Q. Plemio propraetori scriptum, ut rei agenda adesset. profecti ab Regio, scalas ad editam altitudinem arcis fabricatas portantes, media ferme nocte ex eo loco, unde convenerat, signum dedere proditoribus arcis; qui parati intentique et ipsi scalas ad id ipsum factas cum demisissent, pluribusque simul locis scandentes acceperant, priusquam clamor oreretur, in vigiles Poenorum, ut in nullo tali metu sopitos, impetus est factus. quorum gemitus primo morientium exauditus; dein subita consternatio ex somno et tumultus, cum causa ignoraretur; postremo certior res aliis excitantibus alios. iamque ad arma pro se quisque vocabat: hostes in arce esse et caedi vigiles; oppressique forent Romani nequaquam numero pares, ni clamor ab iis qui extra arcem erant sublatus incertum, unde accidisset, omnia vana augente nocturno tumultu, fecisset.

LIVY XXIX. 6, 3.

4. cur saepe sicci parva rura Nomenti
laremque villae sordidum petam, quaeris?
nec cogitandi, Sparse, nec quiescendi
in urbe locus est pauperi. negant vitam
ludi magistri mane, nocte pistorum,
aerariorum marculi die toto.
hinc otiosus sordidam quatit mensam
Neroniana nummularius massa;
illinc balucis malleator Hispanae
tritum nitenti fuste verberat saxum.
nec turba cessat entheata Bellonae,
nec fasciato naufragus loquax trunco,
a matre doctus nec rogare Iudaeus,
nec sulphuratae lippus institor mercis.
numerare pigri damna qui potest somni,
dicet quot aera verberent manus urbis,
cum secta Colcho Luna vapulat rhombo:
tu, Sparse, nescis ista, nec potes scire,
Petilianis delicatus in regnis,
cui plana summos despicit domus montes,
et rus in urbe est vinitorque Romanus.
nec in Falerno colle maior auctumnus,
intraque limen clusus essedo cursus,
et in profundo somnus, et quies nullis
offensa linguis; nec dies nisi admissus.
nos transeuntis risus excitat turbae,
et ad cubile est Roma. taedio fessis
dormire quotiens libuit, imus ad villam.

MARTIAL, XII. 57.

SECTION B.

WEDNESDAY, June 3, 1885. 9—12.

TRANSLATE, accompanying each piece with a short paraphrase or statement of the general argument:

1. ΞΕ. οὐκοῦν τοῦτο μὲν ἱκανῶς συνειλήφαμεν, ὅτι παραδείγματός γ' ἐστὶ τότε γένεσις, ὅποταν ὃν ταῦτόν ἐν ἐτέρῳ διεσπασμένῳ δοξαζόμενον ὀρθῶς καὶ συναχθὲν περὶ ἐκάτερον ὡς συνάμφῳ μίαν ἀληθῆ δόξαν ἀποτελῇ; ΝΕ. ΣΩ. Φαίνεται. ΞΕ. Θαυμάζοιμεν ἂν οὖν εἰ ταῦτόν τοῦτο ἡμῶν ἢ ψυχῇ φύσει περὶ τὰ τῶν πάντων στοιχεῖα πεπονηυῖα τοτὲ μὲν ὑπ' ἀληθείας περὶ ἐν ἑκαστον ἐν τισιν ἴστανται, τοτὲ δὲ περὶ ἅπαντα ἐν ἐτέροις αὐτῶν φέρεται, καὶ τὰ μὲν αὐτῶν ἀμῇ γέ πῃ τῶν συγκράσεων ὀρθῶς δοξάζει, μετατιθέμενα δ' εἰς τὰς τῶν πραγμάτων μακρὰς καὶ μὴ ῥαδίους συλλαβὰς ταῦτά ταῦτα πάλιν ἀγνοεῖ; ΝΕ. ΣΩ. Καὶ θαυμαστόν γε οὐδέν. ΞΕ. Πῶς γάρ, ὦ φίλε, δύναται ἂν τις ἀρχόμενος ἀπὸ δόξης ψευδοῦς ἐπὶ τι τῆς ἀληθείας καὶ μικρὸν μέρος ἀφικόμενος κτήσασθαι φρόνησιν; ΝΕ. ΣΩ. Σχεδὸν οὐδαμῶς. ΞΕ. Οὐκοῦν ταῦτα εἰ ταύτῃ πέφυκεν, οὐδὲν δὴ πλημμελοῖμεν ἂν ἐγὼ τε καὶ σὺ πρῶτον μὲν ἐπιχειρήσαντες ὅλου παραδείγματος ἰδεῖν τὴν φύσιν ἐν σμικρῷ κατὰ μέρος ἄλλῳ παραδείγματι, μετὰ δὲ ταῦτα μέλλοντες, ἐπὶ τὸ τοῦ βασιλέως μέγιστον ὃν ταῦτόν εἶδος ἀπ' ἐλαττόνων φέροντές ποθεν, διὰ παραδείγματος ἐπιχειρεῖν αὐτὴν τῶν κατὰ πόλιν θεραπειῶν τέχνη γνωρίζειν, ἵνα ὕπαρ ἂντ' ὀνείρατος ἡμῖν γίγνηται; ΝΕ. ΣΩ. Πάνυ μὲν οὖν ὀρθῶς.

PLATO *politicus* 278.

2. εἰσὶν ἄρα δύο αἰτίαι αὐται, τό θ' οὐ ἔνεκα καὶ τὸ ἐξ ἀνάγκης· πολλὰ γὰρ γίνεται, ὅτι ἀνάγκη. ἴσως δ' ἂν τις ἀπορήσειε ποῖαν λέγουσιν ἀνάγκην οἱ λέγοντες ἐξ ἀνάγκης· τῶν μὲν γὰρ δύο τρόπων οὐδέτερον οἶόν τε ὑπάρχειν τῶν διωρισμένων ἐν τοῖς κατὰ φιλοσοφίαν. ἔστι δ' ἓν γε τοῖς ἔχουσι γένεσιν ἢ τρίτῃ λέγομεν γὰρ τὴν τροφήν ἀναγκαῖόν τι κατ' οὐδέτερον τούτων τῶν τρόπων, ἀλλ' ὅτι οὐχ οἶόν τ' ἄνευ ταύτης εἶναι. τοῦτο δ' ἐστὶν ὥσπερ ἐξ ὑποθέσεως· ὥσπερ γὰρ ἐπεὶ δεῖ σχίζειν τῷ πελέκει, ἀνάγκη σκληρὸν εἶναι, εἰ δὲ σκληρόν, χαλκοῦν ἢ σιδηροῦν, οὕτως καὶ ἐπεὶ τὸ σῶμα ὄργανον (ἔνεκά τινος γὰρ ἑκαστον τῶν μορίων, ὁμοίως δὲ καὶ τὸ ὅλον), ἀνάγκη ἄρα τοιονδί εἶναι καὶ ἐκ τοιωνδί, εἰ ἐκείνο ἔσται. ὅτι μὲν οὖν δύο τρόποι τῆς αἰτίας, καὶ δεῖ λέγοντας τυγχάνειν μάλιστα μὲν ἀμφοῖν, εἰ δὲ μὴ, δηλόν γε πειρᾶσθαι ποιεῖν, καὶ ὅτι πάντες οἱ τοῦτο μὴ λέγοντες οὐδὲν ὡς εἰπεῖν περὶ φύσεως λέγουσιν· ἀρχὴ γὰρ ἢ φύσις μᾶλλον τῆς ὕλης. ἐνιαχοῦ δέ που αὐτῇ καὶ Ἐμπεδοκλῆς περιπίπτει, ἀγόμενος ὑπ' αὐτῆς τῆς ἀληθείας, καὶ τὴν οὐσίαν καὶ τὴν φύσιν ἀναγκάζεται φάναι τὸν λόγον εἶναι, οἷον ὅσπου ἀποδιδούς τί ἐστίν· οὔτε γὰρ ἓν τι τῶν στοιχείων λέγει αὐτὸ

οὔτε δύο ἢ τρία οὔτε πάντα, ἀλλὰ λόγον τῆς μίξεως αὐτῶν. δῆλον τοίνυν ὅτι καὶ ἡ σὰρξ τὸν αὐτὸν τρόπον ἐστί, καὶ τῶν ἄλλων τῶν τοιούτων μορίων ἕκαστον. αἷτιον δὲ τοῦ μὴ ἐλθεῖν τοὺς προγενεστέρους ἐπὶ τὸν τρόπον τοῦτον, ὅτι τὸ τί ἦν εἶναι καὶ τὸ ὀρίσασθαι τὴν οὐσίαν οὐκ ἦν, ἀλλ' ἤψατο μὲν Δημόκριτος πρῶτος, ὡς οὐκ ἀναγκαίου δὲ τῇ φυσικῇ θεωρίᾳ, ἀλλ' ἐκφερόμενος ὑπ' αὐτοῦ τοῦ πράγματος, ἐπὶ Σωκράτους δὲ τοῦτο μὲν ἠϋξήθη, τὸ δὲ ζητεῖν τὰ περὶ φύσεως ἔληξε, πρὸς δὲ τὴν χρήσιμον ἀρετὴν καὶ τὴν πολιτικὴν ἀπέκλιναν οἱ φιλοσοφούντες.ὁ μὲν οὖν τρόπος οὗτος ὁ τῆς μεθόδου, καὶ περὶ ὧν δεῖ λαβεῖν τὰς αἰτίας, ταῦτα καὶ τοιαῦτά ἐστιν.

ARISTOTLE *de partibus animalium* I vii viii.

3. cum ab Epicuro, qui totam dialecticam et contemnit et irridet, non impetrent ut uerum esse concedat quod ita effabimur, 'aut uiuet cras Hermarchus aut non uiuet', cum dialectici sic statuunt, omne, quod ita diiunctum sit, quasi 'aut etiam aut non', non modo uerum esse, sed etiam necessarium, uide quam sit catus is, quem isti tardum putant: si enim, inquit, alterutrum concessero necessarium esse, necesse erit cras Hermarchum aut uiuere aut non uiuere; nulla autem est in natura rerum talis necessitas. cum hoc igitur dialectici pugnent, id est, Antiochus et Stoici; totam enim euertit dialecticam. nam si e contrariis diiunctio, contraria autem ea dico, cum alterum aiat, alterum neget, si talis diiunctio falsa potest esse, nulla uera est. mecum uero quid habent litium, qui ipsorum disciplinam sequor? cum aliquid huius modi inciderat, sic ludere Carneades solebat: 'si recte conclusi, teneo; sin uitiose, minam Diogenes mihi reddet': ab eo enim Stoico dialecticam didicerat.

CICERO *academica priora* II 30 §§ 97, 98.

4. γινώσκει δὲ αὐτὸ ἢ ἐπ' αὐτὸ δύναμις τεταγμένη, ἥς οὐδὲν κυριώτερον εἰς κρίσιν τῶν ἑαυτῆς, ὅταν καὶ ἡ ἄλλη συνεπικρίνη ψυχῇ. τάχα δὲ καὶ αὕτη λέγει συναρμόττουσα τῷ παρ' αὐτῇ εἶδει κακείνῳ πρὸς τὴν κρίσιν χρωμένῃ ὥσπερ κανόνι τοῦ εὐθέος. πῶς δὲ συμφωνεῖ τὸ περὶ σῶμα τῷ πρὸ σώματος; πῶς δὲ τὴν ἔξω οἰκίαν τῷ ἔνδον οἰκίας εἶδει ὁ οἰκοδομικὸς συναρμόσας καλὴν εἶναι λέγει; ἢ ὅτι ἐστὶ τὸ ἔξω, εἰ χωρίσεως τοὺς λίθους, τὸ ἔνδον εἶδος μερισθὲν τῷ ἔξω ὕλης ὅγκῳ, ἀμερὲς ὃν ἐν πολλοῖς φανταζόμενον. ὅταν οὖν ἡ αἰσθησις τὸ ἐν σώμασιν εἶδος ἴδῃ συνδησάμενον καὶ κρατήσαν τῆς φύσεως τῆς ἐναντίας ἀμόρφου οὐσης καὶ μορφῇ ἐπὶ ἄλλαις μορφαῖς ἐκπρεπῶς ἐποχουμένην, συνελοῦσα ἀθρόον αὐτὸ τὸ πολλαχῇ ἀνήνεγκέ τε καὶ εἰσήγαγεν εἰς τὸ εἶσω ἀμερὲς ἤδη καὶ ἔδωκε τῷ ἔνδον σύμφωνον καὶ συναρμόττον καὶ φίλον· οἷα ἀνδρὶ ἀγαθῷ προσηνὲς ἐπιφαινόμενον ἀρετῆς ἵχνος ἐν νέῳ συμφωνοῦν τῷ ἀληθεῖ τῷ ἔνδον. τὸ δὲ τῆς χροῆς κάλλος ἀπλοῦν μορφῇ καὶ κρατήσῃ τοῦ ἐν ὕλῃ σκοτεινοῦ, παρουσία φωτὸς ἀσωμάτου καὶ λόγου καὶ εἶδους ὄντος.

PLOTINUS *Ennead* I vi 3.

WEDNESDAY, June 3, 1885. 1.30—4.30.

[You are recommended to attempt at least partially not less than six of these questions of which the last should be one.]

I. EXPLAIN fully:

(α) ΣΩ. ἔχε δὴ ἄλλο τι τοῦ μὲν σκληροῦ τὴν σκληρότητα διὰ τῆς ἐπαφῆς αἰσθῆσεται, καὶ τοῦ μαλακοῦ τὴν μαλακότητα ὡσαύτως;

ΘΕ. ναί.

ΣΩ. τὴν δέ γε οὐσίαν καὶ ὃ τι ἐστὸν καὶ τὴν ἐναντιότητα πρὸς ἀλλήλων καὶ τὴν οὐσίαν αὐτῆς ἐναντιότητος αὐτῇ ἢ ψυχῇ ἐπανιούσα καὶ συμβάλλουσα πρὸς ἀλλήλα κρίνειν πειράται ἡμῖν.

Theaetetus 186 B.

(β) ΠΡ. ἄρ' οὖν λέγεις, ὅταν τις ἐμὲ φῇ Πρώταρχον, ἓνα γεγονότα φύσει, πολλοὺς εἶναι πάλιν τοὺς ἐμὲ καὶ ἐναντίους ἀλλήλοις, μέγαν καὶ μικρὸν τιθέμενος καὶ βαρὺν καὶ κοῦφον τὸν αὐτὸν καὶ ἄλλα μυρία;

ΣΩ. σὺ μὲν, ὦ Πρώταρχε, εἰρηκας τὰ δεδημευμένα τῶν θαυμασῶν περὶ τὸ ἐν καὶ πολλὰ, συγκεχωρημένα δ' ὡς ἔπος εἰπεῖν ὑπὸ πάντων ἤδη μὴ δεῖν τῶν τοιούτων ἄπτεσθαι, παιδαριώδη καὶ ῥάδια καὶ σφόδρα τοῖς λόγοις ἐμπόδια ὑπολαμβάνόντων γίγνεσθαι.

Philebus 14 D.

(γ) τὰ μὲν οὐ παρακαλοῦντα, ἣν δ' ἐγώ, ὅσα μὴ ἐκβαίνει εἰς ἐναντίαν αἴσθησιν ἤμα· τὰ δ' ἐκβαίνοντα ὡς παρακαλοῦντα τίθημι, ἐπειδὴν ἡ αἴσθησις μηδὲν μᾶλλον τοῦτο ἢ τὸ ἐναντίον δηλοῖ.

republic 523 B.

Investigate the point of view from which Plato in the foregoing passages is regarding the συλλογισμός of the soul concerning the report of the senses, indicating any development you may find in his view. Do you consider that the *Theaetetus* lies nearer to the standpoint of the *Republic* or to that of the *Philebus* in this matter?

II. Translate:

(α) ἐπειδὴ δὲ οὐδὲ τοῦτο μένει, τὸ λευκὸν ρεῖν τὸ ρέον, ἀλλὰ μεταβάλλει, ὥστε καὶ αὐτοῦ τούτου εἶναι ῥοήν, τῆς λευκότητος, καὶ μεταβολὴν εἰς ἄλλην χροάν, ἵνα μὴ ἄλφ ταύτῃ μένον· ἀρὰ ποτε οἷον τέ τι προσειπεῖν χρῶμα, ὥστε καὶ ὀρθῶς προσσαγορεύειν;

Theaetetus 182 D.

(β) τρίτον δὲ αὐτὸ γένος ὃν τὸ τῆς χώρας· αἰεὶ, φθορὰν οὐ προσδεχόμενον, ἔδραν δὲ παρέχον ὅσα ἔχει γένεσιν πᾶσιν, αὐτὸ δὲ μετ' ἀναισθησίας ἀπτόν λογισμῷ τινὶ νόθῳ, μέγας πιστόν· πρὸς δὲ καὶ ὄνειροπολοῦμεν βλέποντες καὶ φάμεν ἀναγκαῖον εἶναι πού τὸ ὃν ἅπαν ἐν τινὶ τόπῳ καὶ κατέχον χώραν τινά, τὸ δὲ μήτ' ἐν γῇ μήτε πού κατ' οὐρανὸν οὐδὲν εἶναι.

Timaeus 52 A.

Explain these passages, drawing out carefully the mutual relations of the theories propounded in them.

Examine generally Plato's developments of the Herakleitean principle.

III. ἡμεῖς δὲ φάμεν μὲν εἶναι τινα ὕλην τῶν σωμάτων τῶν αἰσθητῶν, ἀλλὰ ταύτην οὐ χωριστὴν ἀλλ' αἰεὶ μετ' ἐναντιώσεως, ἐξ ἧς γίνεται τὰ καλούμενα στοιχεῖα.

de generatione et corruptione B 1. 329 a 24.

State briefly Aristotle's theory of matter, the elements, and the changes which take place in them. What fundamental objections does he raise against the theories

(a) of the Ionian monists, (b) of Empedocles? What may be inferred from the *de generatione et corruptione* in regard to the teaching of Anaximander?

IV. (α) ὅτι μὲν οὖν οὐδεμία τῶν παραδεδομένων ἐπιστημῶν πραγματεύεται περὶ τὸ συμβεβηκός, δηλόν·.....τοῦτο δὲ οὐδεμία ζητεῖ τῶν ὁμολογουμένως οὐσῶν ἐπιστημῶν πλην ἢ σοφιστικῆ· περὶ τὸ συμβεβηκός γὰρ αὕτη μόνῃ πραγματεύεται, διὸ Πλάτων οὐ κακῶς εἰρηκε φήσας τὸν σοφιστὴν περὶ τὸ μὴ ὃν διατρίβειν.

metaph. K 8.

(β) πάντα κινεῖ λόγον ἄσμενος, τοτὲ μὲν ἐπὶ θάτερα κυκλῶν καὶ συμφύρων εἰς ἓν, τοτὲ δὲ πάλιν ἀνειλίττων καὶ διαμερίζων, εἰς ἀπορίαν αὐτὸν μὲν πρῶτον καὶ μάλιστα καταβάλλον, δεύτερον δ' αἰεὶ τὸν ἐχόμενον.

Philebus 15 E.

(γ) ἅμα δὲ οὐκ ἂν φύροις ὥσπερ οἱ ἀντιλογικοὶ περὶ τε τῆς ἀρχῆς διαλεγόμενος καὶ τῶν ἐξ ἐκείνης ὠρμημένων, εἴπερ βούλοιό τι τῶν ὕτων εὐρεῖν. ἐκείνοις μὲν γὰρ ἴσως οὐδὲ εἰς περὶ τούτου λόγος οὐδὲ φροντίς· ἱκανοὶ γὰρ ὑπὸ σοφίας ὁμοῦ πάντα κυκλῶντες ὁμῶς δύνασθαι αὐτοὶ αὐτοῖς ἀρέσκειν.

Phaedo 101 E.

Explain these passages carefully and in connexion, discriminating between the charges brought against the σοφιστῆς or ἀντιλογικός.

V. Interpret or amend, in either case justifying your procedure :

τέλος δὲ πάσης ἐνεργείας ἐστὶ τὸ κατὰ τὴν ἔξιν. καὶ τῷ ἀνδρείῳ δὲ ἡ ἀνδρεία καλόν. τοιοῦτον δὲ καὶ τὸ τέλος· ὁρίζεται γὰρ ἕκαστον τῷ τέλει. καλοῦ δὲ ἕνεκα ὁ ἀνδρείος ὑπομένει καὶ πράττει τὰ κατὰ τὴν ἀνδρείαν.

Nicomachean ethics III 7 § 6, 1115 b 20.

Investigate the bearing of this passage (a) upon Aristotle's theory of the virtues, (b) upon his conception of ethics. Compare his account of true courage and its counterfeits with anything analogous which occurs in the writings of Plato.

VI. Explain :

Unde autem subito vetus Academia revocata est? Nominis dignitatem videtur, cum a re ipsa descisceret, retinere voluisse, quod erant qui illum gloriae causa facere dicerent, sperare etiam fore ut ei qui se sequerentur Antiochii vocarentur.

CICERO academica II § 70.

Give some account of the position of Antiochus of Ascalon in the history of philosophy, shewing as far as possible his relations (a) to the old Platonic and Aristotelian schools, (β) to contemporary Academicism, (γ) to Stoicism. On what do you suppose he based his claim to have revived the Old Academy?

VII. Translate with commentary :

(1) Μανθάνω.....ὅτι βούλει διορίζειν σαφέστερον εἶναι τὸ ὑπὸ τῆς τοῦ διαλέγεσθαι ἐπιστήμης τοῦ ὄντος τε καὶ νοητοῦ θεωρούμενον ἢ τὸ ὑπὸ τῶν τεχνῶν καλουμένων, αἷς αἱ ὑποθέσεις ἀρχαὶ καὶ διανοίᾳ μὲν ἀναγκάζονται ἀλλὰ μὴ αἰσθήσεσιν αὐτὰ θεᾶσθαι οἱ θεώμενοι, διὰ δὲ τὸ μὴ ἐπ' ἀρχὴν ἀνελθόντες σκοπεῖν ἀλλ' ἐξ ὑποθέσεων, νοῦν οὐκ ἴσχειν περὶ αὐτὰ δοκοῦσί σοι, καίτοι νοητῶν ὄντων μετὰ ἀρχῆς.

republic 511 c.

(2) ταχέως δ' ἂν τις καὶ αὐτὸν τὸν Ἡράκλειτον τοῦτον ἐρωτήσας τὸν τρόπον ἠνάγκασεν ὁμολογεῖν μηδέποτε τὰς ἀντικειμένας φάσεις δυνατόν εἶναι κατὰ τῶν αὐτῶν ἀληθεύεσθαι· νῦν δ' οὐ συνεῖς ἑαυτοῦ τί ποτε λέγει, ταύτην ἔλαβε τὴν δόξαν.

metaph. K 5. 1062 a 31.

(3) any two of the following :

(a) Εἶναι μὲν δὴ τῷ ἐνὶ οὐχ οἷόν τε, εἴπερ γε μὴ ἔστι, μετέχειν δὲ πολλῶν οὐδὲν κωλύει, ἀλλὰ καὶ ἀνάγκη, εἴπερ τό γε ἐν ἐκείνῳ καὶ μὴ ἄλλο μὴ ἔστιν. εἰ μέντοι μήτε τὸ ἐν μήτ' ἐκείνῳ μὴ ἔσται, ἀλλὰ περὶ ἄλλου τοῦ ὁ λόγος, οὐδὲ φθέγγεσθαι δεῖ οὐδέν· εἰ δὲ τὸ ἐν ἐκείνῳ καὶ μὴ ἄλλο ὑπόκειται μὴ εἶναι, καὶ τοῦ ἐκείνου καὶ ἄλλων πολλῶν ἀνάγκη αὐτῷ μετεῖναι.

Parmenides 160 E.

(β) Θρύπτεσθαι δὴ, οἶμαι, κερματιζόμενον ἀνάγκη πᾶν τὸ ὄν, ὃ ἂν τις λάβῃ τῇ διανοίᾳ. ὄγκος γάρ που ἀπὸ ἐνὸς λαμβάνοιτ' ἂν. Πάνυ μὲν οὖν. Οὐκοῖν τό γε τοιοῦτον πόρρωθεν μὲν ὁρῶντι καὶ ἀμβλὺ ἐν φαίνεσθαι ἀνάγκη, ἐγγύθεν δὲ καὶ ὄξυ νοοῦντι πλήθει ἄπειρον ἐν ἕκαστον φανῆναι, εἴπερ στέρεται τοῦ ἐνὸς μὴ ὄντος; Ἀναγκαιότατον μὲν οὖν. Οὕτω δὲ ἄπειρά τε καὶ πέρασ ἔχοντα καὶ ἐν καὶ πολλὰ ἕκαστα τάλλα δεῖ φαίνεσθαι, ἐν εἰ μὴ ἔστιν, ἀλλὰ δὲ τοῦ ἐνός.

Parmenides 165 B.

(γ) Δημόκριτος δὲ καὶ Λεύκιππος ποιήσαντες τὰ σχήματα τὴν ἀλλοίωσιν καὶ τὴν γένεσιν ἐκ τούτων ποιοῦσι, διακρίσει μὲν καὶ συγκρίσει γένεσιν καὶ φθορίν, τάξει δὲ καὶ θέσει ἀλλοίωσιν. ἐπεὶ δ' ὥντο τυλῆθες ἐν τῷ φαίνεσθαι, ἐναντία δὲ καὶ ἄπειρα τὰ φαινόμενα, τὰ σχήματα ἄπειρα ἐποίησαν, ὥστε ταῖς μεταβολαῖς τοῦ συγκειμένου τὸ αὐτὸ ἐναντίον δοκεῖν ἄλλῳ καὶ ἄλλῳ, καὶ μετακινεῖσθαι μικροῦ ἐμμεγνυμένου, καὶ ὅλως ἕτερον φαίνεσθαι ἐνὸς μετακινήθentos.

de generatione et corruptione A 2. 315 b 6.

(δ) δεῖ δὲ πλείους εἶναι τὰς κινήσεις καὶ ἐναντίας, ἢ τῇ φορᾷ ἢ τῇ ἀνωμαλίᾳ· τῶν γὰρ ἐναντίων τὰναντία αἰτία. διὸ καὶ οἷχ ἡ πρώτη φορὰ αἰτία ἐστὶ γενέσεως καὶ φθορᾶς, ἀλλ' ἢ κατὰ τὸν λοξὸν κύκλον· ἐν ταύτῃ γὰρ καὶ τὸ συνεχές ἐστὶ καὶ τὸ κινεῖσθαι δύο κινήσεις· ἀνάγκη γάρ, εἴ γε αἰεὶ ἔσται συνεχὴς γένεσις καὶ φθορά, αἰεὶ μὲν τι κινεῖσθαι, ἵνα μὴ ἐπιλείπωσιν αὐταὶ αἱ μεταβολαί, διὸ δ' ὥπως μὴ θάτερον συμβαίνει μόνον.

de generatione et corruptione B 10. 336 a 29.

THURSDAY, June 4, 1885. 9—12.

[You are recommended to attempt, at least partially, not less than six of these questions, of which the last should be one.]

I. STATE summarily the objections raised against the theory of ideas in the early part of the *Parmenides*, and shew how far, and how, those objections are met—whether by refutation of the objections or by modification of the doctrine impugned—in the latter part of the dialogue. Note carefully what remains to be hereafter supplied.

II. εἰν δέ τις, ὁ νῦν δὲ ἐγὼ ἔλεγον, πρῶτον μὲν διαιρῆται χωρὶς αὐτὰ καθ' αὐτὰ τὰ εἶδη, ὅλον ὁμοιότητά τε καὶ ἀνομοιότητά τε καὶ πλῆθος καὶ τὸ ἐν καὶ στάσις καὶ κίνησις καὶ πάντα τὰ τοιαῦτα, εἶτα ἐν ἑαυτοῖς ταῦτα δυνάμενα συγκεράνυσθαι καὶ διακρίνεσθαι ἀποφαίνει, ἀγαίμην ἂν ἔγωγ', ἔφη, θαυμαστῶς, ὦ Ζήνων.

Parmenides 129 D.

Formulate the doctrine here indicated, and draw out the consequences. Compare the view which Socrates takes in this passage with the teaching, (a) of the latter part of the dialogue, (b) of the *Phaedo*, (c) of the *sophist*.

III. ἴδοι δ' ἂν τις καὶ ἐκ τούτων ὅσον διαφέρουσιν οἱ φυσικῶς καὶ λογικῶς σκοποῦντες· περὶ γὰρ τοῦ ἀτομα εἶναι μεγέθη οἱ μὲν φασιν ὅτι τὸ αὐτοτρίγωνον πολλὰ ἔσται, Δημῖκριτος δ' ἂν φανείη οἰκειοῖς καὶ φυσικοῖς λόγοις πεπεισθαι.

de generatione et corruptione A 2. 316 a 10.

Characterize, with illustrations, the method and the arguments used by Aristotle in this treatise. Account for the different values attached to the Democritean physics by Plato, Aristotle, and Epicurus.

IV. (α) καὶ τὸ μὲν οὖν σαφές οὐτις ἀνὴρ γένετ' οὐδέ τις ἔσται εἰδώς, ἀμφὶ θεῶν τε καὶ ἄσσα λέγω περὶ πάντων· εἰ γὰρ καὶ τὰ μάλιστα τύχοι τετελεσμένον εἶπών, αὐτὸς ὅμως οὐκ οἶδε· δόκος δ' ἐπὶ πᾶσι τέτυκται.

XENOPHANES fr. 14.

(β) χρεὼ δέ σε πάντα πυθέσθαι, ἡμὲν ἀληθείης εὐπειθέος ἀτρεκέως ἦτορ, ἡδὲ βροτῶν δόξας τῆς οὐκ ἐν πίστις ἀληθείης ἀλλ' ἀπατή.

PARMENIDES 28—31.

(γ) φύσις κρύπτεσθαι φιλεῖ. HERAKLEITOS fr. 10.

(δ) οὐδὲν ἄρα ὀρθὴ δόξα ἐπιστήμης χεῖρον οὐδὲ ἦττον ὠφελίμη ἔσται εἰς τὰς πράξεις, οὐδὲ ἀνὴρ ὁ ἔχων ὀρθὴν δόξαν ἢ ὁ ἐπιστήμην. *Meno* 98 C.

Indicate the conception of δόξα held by various thinkers from Xenophanes to Plato, shewing how far in each case it was associated with philosophical scepticism.

V. Translate:

(α) εἰ γὰρ ἦν ὁ ὀφθαλμὸς ζῶον, ψυχὴ ἂν ἦν αὐτοῦ ἢ ὕψις· αὕτη γὰρ οὐσία ὀφθαλμοῦ ἢ κατὰ τὸν λόγον. *de anima* II i 9.

(β) καὶ οὗτος ὁ νοῦς χωριστὸς καὶ ἀπαθὴς καὶ ἀμυγῆς, τῇ οὐσίᾳ ὧν ἐνεργεία... χωρισθεὶς δ' ἐστὶ μόνον τοῦθ' ὅπερ ἐστὶ, καὶ τοῦτο μόνον ἀθάνατον καὶ αἰδίων.

ibid. III v 2.

Explain the psychology of these extracts, and determine how far and in what sense the latter is justifiable on Aristotle's own principles.

VI. Translate :

τὴν δ' εἰμαρμένην αἰτίαν ἀνίκητον καὶ ἀκώλυτον καὶ ἄτρεπτον ἀποφαίνων, αὐτὸς Ἄτροπον καλεῖ καὶ Ἀδράστειαν καὶ Ἀνάγκην καὶ Πεπρωμένην, ὡς πέρας ἅπασιν ἐπιτιθεῖσαν. πότερον οὖν τὰς συγκαταθέσεις μὴ λέγωμεν ἐφ' ἡμῖν εἶναι, μὴδὲ τὰς ἀρετάς, μὴδὲ τὰς κακίας, μὴδὲ τὸ κατορθοῦν, μὴδὲ τὸ ἀμαρτάνειν ἢ τὴν εἰμαρμένην λέγωμεν ἐλλείπουσαν εἶναι, καὶ τὴν πεπρωμένην ἀπεράτῳ, καὶ τὰς τοῦ Διὸς κινήσεις καὶ σχέσεις ἀσυντελέστους; PLUTARCH *περὶ Στωικῶν ἐναντιωμάτων* § 47.

Explain as clearly as the subject admits the Stoic view of freewill and destiny, showing its connexion with the physical theory. Compare the position of the Stoics regarding necessity with Plato's. Give the leading points of their controversy with Carneades on this head.

VII. Translate with commentary:

- (1) τῷ τὸν δ' ἐστὶ νοεῖν τε καὶ οὐνεκὲν ἐστὶ νύημα·
οὐ γὰρ ἄνευ τοῦ ἐόντος, ἐν ᾧ πεφατισμένον ἐστίν,
εὐρήσεις τὸ νοεῖν· οὐδὲν γὰρ ἢ ἐστὶν ἢ ἔσται
ἄλλο παρέκ τοῦ ἐόντος. PARMENIDES 93—96.

(2) λέγουσι δὲ τὸ μὲν ἀγαθὸν ὀρίσθαι, τὴν δ' ἡδονὴν ἀόριστον εἶναι, ὅτι δέχεται τὸ μᾶλλον καὶ τὸ ἥττον. εἰ μὲν οὖν ἐκ τοῦ ἡδεσθαι τοῦτο κρίνουσι, καὶ περὶ τὴν δικαιοσύνην καὶ τὰς ἄλλας ἀρετάς, καθ' ἃς ἐναργῶς φασὶ μᾶλλον καὶ ἥττον τοὺς ποιοῦνς ὑπάρχειν κατὰ τὰς ἀρετάς, ἔσται τὸ αὐτό... εἰ δ' ἐν ταῖς ἡδοναῖς, μή ποτ' οὐ λέγουσι τὸ αἴτιον, ἂν ὧσιν αἱ μὲν ἀμυγδαῖς αἱ δὲ μικταί. τί γὰρ καλῶς, καθάπερ ὑγίεια ὀρισμένη οὐσα δέχεται τὸ μᾶλλον καὶ τὸ ἥττον, οὕτω καὶ τὴν ἡδονήν; *Nicomachean ethics* x 3 §§ 2, 3. 1173 a 15.

- (3) any two of the following:

(α) Ἀλλά, φάναι, ὦ Παρμενίδη, τὸν Σωκράτη, μὴ τῶν εἰδῶν ἕκαστον ἢ τούτων νόημα, καὶ οὐδαμοῦ αὐτῷ προσήκη ἐγγίγνεσθαι ἄλλοθι ἢ ἐν ψυχαῖς· οὕτω γὰρ ἂν ἔν γε ἕκαστον εἴη καὶ οὐκ ἂν ἔτι πείσχοι ἂ νῦν δὴ ἐλέγετο. Τί οὖν; φάναι, ἐν ἕκαστῳ ἐστὶ τῶν νοημάτων, νόημα δὲ οὐδενός; Ἀλλ' ἀδύνατον, εἰπείν. Ἀλλὰ τινός; Ναί. ὄντος ἢ οὐκ ὄντος; ὄντος. Οὐχ ἑνός τινος, δ' ἐπὶ πᾶσιν ἐκείνο τὸ νόημα ἐπὶ νοεῖ, μίαν τινα οὐσαν ἰδέαν; Ναί. Εἴτα οὐκ εἶδος ἔσται τοῦτο τὸ νοούμενον ἐν εἶναι, ἀεὶ ὃν τὸ αὐτὸ ἐπὶ πᾶσιν; Ἀνάγκη αὖ φαίνεται.

Parmenides 132 B.

(β) τὸ τί ἦν εἶναι καὶ ἕκαστον ἐπὶ τινῶν μὲν ταῦτόν, ὥσπερ ἐπὶ τῶν πρώτων οὐσιῶν, οἷον καμπυλότης καὶ καμπυλότητι εἶναι, εἰ πρώτη ἐστὶν· λέγω δὲ πρώτην ἢ μὴ λέγεται τῷ ἄλλῳ ἐν ἄλλῳ εἶναι καὶ ὑποκειμένῳ ὡς ὕλη· ὅσα δ' ὡς ὕλη ἢ ὡς συνειλημμένα τῇ ὕλῃ, οὐ ταῦτό, οὐδ' ὅσα κατὰ συμβεβηκὸς ἐν, οἷον ὁ Σωκράτης καὶ τὸ μουσικόν. ταῦτα γὰρ ταῦτά κατὰ συμβεβηκός. *metaphysics* Z 11. 1037 a 33.

(γ) ὀρισμὸς δ' ἐστὶν οὐκ ἂν ὄνομα λόγῳ ταῦτό σημαίνει... ἀλλ' ἐὰν πρώτου τινὸς ἢ τοιαῦτα δ' ἐστὶν ὅσα λέγεται μὴ τῷ ἄλλῳ κατ' ἄλλον λέγεσθαι. οἷον ἔσται ἄρα οὐθενὶ τῶν μὴ γένους εἰδῶν ὑπάρχον τὸ τί ἦν εἶναι, ἀλλὰ τοῖσι μοῖον· ταῦτα γὰρ δοκεῖ οὐ κατὰ μετοχὴν λέγεσθαι καὶ πάθος, οἷον ὡς συμβεβηκός· ἀλλὰ λόγος μὲν ἔσται ἐκάστου καὶ τῶν ἄλλων τί σημαίνει, ἐὰν ἢ ὄνομα, ὅτι τότε τῷδε ὑπάρχει, ἢ ἀντὶ λόγου ἀπλοῦ ἀκριβέστερος· ὀρισμὸς δ' οὐκ ἔσται οὐδὲ τὸ τί ἦν εἶναι.

metaphysics Z 4. 1030 a 7.

(δ) ἀλλὰ μὴν οὐδὲ Πλάτωνί γε οἷον τε λέγειν ἦν οἶεται ἐνίοτε ἀρχὴν εἶναι, τὸ αὐτὸ ἑαυτὸ κινεῖν· ὕστερον γὰρ καὶ ἅμα τῷ οὐρανῷ ἢ ψυχῇ, ὡς φησὶν.

metaphysics Λ 6. 1071 b 37.

THURSDAY, June 4, 1885. 1.30—4.30.

[You are recommended to attempt, at least partially, not less than six of these questions, of which the last should be one.]

I. λέγεται δ' ὥσπερ τὸ ὑποκείμενον οὐσία εἶναι καὶ τὸ τί ἦν εἶναι καὶ τὸ ἐκ τούτων, καὶ τὸ καθόλου. *metaphysics Z 13. 1038 b 2.*

How does Aristotle dispose of the pretensions (a) of ὅλη, (b) of τὸ καθόλου to be regarded as πρώτη οὐσία? Explain carefully what he means by τὸ καθόλου. What do you conceive to be his settlement of the conflicting claims of τὸ τί ἦν εἶναι and τὸ ἐκ τούτων?

II. ἡ δὲ νόησις ἡ καθ' αὐτὴν τοῦ καθ' αὐτὸ ἀρίστου, καὶ ἡ μάλιστα τοῦ μάλιστα. αὐτὸν δὲ νοεῖ ὁ νοῦς κατὰ μετάληψιν τοῦ νοητοῦ. *metaphysics A 7. 1072 b 18.*

Expound this conception of Aristotle's, bringing out as clearly as you can its relation (a) to his theory of τὸ τί ἦν εἶναι, (β) to his psychology. κινεῖ δὲ ὧδε τὸ ὁρεκτόν, καὶ τὸ νοητὸν κινεῖ οὐ κινούμενον. *ibid. 1072 a 26.* Explain and discuss this.

III. (a) διαφέρεται δὲ πρὸς τοὺς Κυρηναίκοις περὶ τῆς ἡδονῆς· οἱ μὲν γὰρ τὴν καταστηματικὴν οὐκ ἐγκρίνουσι, μόνην δὲ τὴν ἐν κινήσει· ὁ δ' ἀμφοτέρων, ψυχῆς καὶ σώματος. *DIAGENES LAERTIUS x § 136.*

Compare the Epicurean doctrine of pleasure with Cyrenaicism and any other hedonistic theories.

(β) τὸ τῆς φύσεως δίκαιόν ἐστι σύμβολον τοῦ συμφέροντος εἰς τὸ μὴ βλάπτειν ἀλλήλους μηδὲ βλάπτεσθαι. ὅσα τῶν ζῴων μὴ ἡδύνατο συνθήκας ποιεῖσθαι τὰς ὑπὲρ τοῦ μὴ βλάπτειν ἀλλήλα μηδὲ βλάπτεσθαι, πρὸς ταῦτα οὐθέν ἐστιν οὔτε δίκαιον οὔτ' ἀδίκον. ὡσαύτως δὲ καὶ τῶν ἐθνῶν ὅσα μὴ ἡδύνατο ἢ μὴ ἐβούλετο τὰς συνθήκας ποιεῖσθαι τὰς ὑπὲρ τοῦ μὴ βλάπτειν μηδὲ βλάπτεσθαι. *ibid. § 150.*

Set forth and discuss the social theory here indicated.

IV. Explain and examine one or other of the following hypotheses:

(a) "Plato's ideal theory, so far as it is allowed to appear in the *Theaetetus*, deals not with hypostatized entities, but rather with necessary forms of thought, which are as inseparable from perception, as from reasoning.....The relation of knowledge to experience, and the nature of the ideas as categories, have come out in the *Theaetetus*."

(b) "The idea is the number hypothetically actualized in time and space."

V. τὸ δὲ λέγειν παραδείγματα αὐτὰ εἶναι καὶ μετέχειν αὐτῶν τὰλλα κενολογεῖν ἐστὶ καὶ μεταφορὰς λέγειν ποιητικὰς. *metaphysics A 9. 991 a 20.*

Explain carefully Plato's doctrines of μέθεξις and μίμησις, taking account if necessary of different stages in the development of his philosophy. Examine Aristotle's criticism.

VI. (1) παράδειγμα δὲ ὅτι μὲν ἐστὶν ἐπαγωγή καὶ περὶ ποῖα ἐπαγωγή, εἴρηται· ἐστὶ δὲ οὔτε ὡς μέρος πρὸς ὅλον οὐθ' ὡς ὅλον πρὸς μέρος οὐθ' ὡς ὅλον πρὸς ὅλον, ἀλλ' ὡς μέρος πρὸς μέρος, ὅμοιον πρὸς ὅμοιον, ὅταν ἀμφὼ μὲν ἢ ὑπὸ τὸ αὐτὸ γένος, γνωριμώτερον δὲ θάτερον ἢ θατέρου. *rhetoric A 1357 b 25.*

State and examine Aristotle's theory of the functions and value of the process here described.

(2) "The mortality of John, Thomas, and others is, after all, the whole evidence we have for the mortality of the Duke of Wellington. Not one iota is added to the proof by interpolating a general proposition.....I am unable to see why we should be forbidden to take the shortest cut from these sufficient premises to the conclusion, and constrained to travel the 'high priori road', by the arbitrary fiat of logicians." MILL.

What would Aristotle say to this?

VII. Translate with commentary:

(1) πρὶν δ' ἐπαχθῆναι ἢ λαβεῖν συλλογισμὸν τρόπον μὲν τινα ἴσως φατέον ἐπίστασθαι, τρόπον δ' ἄλλον οὐ. ὁ γὰρ μὴ ᾔδει εἰ ἔστιν ἀπλῶς, τοῦτο πῶς ᾔδει ὅτι δύο ὀρθῶς ἔχει ἀπλῶς; ἀλλὰ δῆλον ὡς ὥδι μὲν ἐπίσταται, ὅτι καθόλου ἐπίσταται, ἀπλῶς δ' οὐκ ἐπίσταται. εἰ δὲ μὴ, τὸ ἐν τῷ Μένωνι ἀπόρημα συμβήσεται· ἢ γὰρ οὐδὲν μαθήσεται ἢ ἂ οἶδεν. οὐ γὰρ δὴ, ὡς γέ τινες ἐγχειροῦσι λύνειν, λεκτέον· ἂρ' οἶδας ἕπασσαν δυνάδα ὅτι ἀρτία ἢ οὐ; φήσαντος δὲ προήνεγκάν τινα δυνάδα ἣν οὐκ ᾔφει' εἶναι, ὥστ' οὐδ' ἀρτίαν. λύνουσι γὰρ οὐ φάσκοντες εἰδέναι πᾶσαν δυνάδα ἀρτίαν οὖσαν, ἀλλ' ἣν ἴσασιν ὅτι δυνάς. *posterior analytics* A 1. 71 a 24.

(2) quattuor sunt capita, quae concludant nihil esse quod nosci percipi comprehendendi possit, de quo haec tota quaestio est. e quibus primum est esse aliquod visum falsum, secundum non posse id percipi, tertium, inter quae visa nihil intersit, fieri non posse ut eorum alia percipi possint, alia non possint, quartum nullum esse visum verum a sensu profectum, cui non appositum sit visum aliud, quod ab eo nihil intersit quodque percipi non possit. *CICERO academica* II § 83.

(3) ΣΩ. οὐκ οὐκ ἐγὼ τε οὐδὲν ἄλλο ποτὲ γενήσομαι οὕτως αἰσθανόμενος· τοῦ γὰρ ἄλλου ἄλλη αἴσθησις, καὶ ἀλλοῖον καὶ ἄλλον ποιεῖ τὸν αἰσθανόμενον· οὐτ' ἐκείνο τὸ ποιοῦν ἐμὲ μήποτ' ἄλλω συνελθὼν ταῦτόν γενησάν τοιοῦτον γένηται· ἀπὸ γὰρ ἄλλου ἄλλο γενησάν ἀλλοῖον γενήσεται. ΘΕ. ἔστι ταῦτα. ΣΩ. οὐδὲ μὴν ἐγωγε ἐμαυτῷ τοιοῦτος, ἐκείνῳ τε ἑαυτῷ τοιοῦτον γενήσεται. *Theaetetus* 159 E.

(4) πάλιν δὴ, ὅπερ ἄρτι ἐπεχείρουν, οὐκ, εἴπερ ἢ συλλαβὴ μὴ τὰ στοιχεῖα ἔστιν, ἀνάγκη αὐτὴν μὴ ὡς μέρη ἔχειν ἑαυτῆς τὰ στοιχεῖα, ἢ ταῦτόν οὖσαν αὐτοῖς ὁμοίως ἐκείνοις γνωστὴν εἶναι; *Theaetetus* 205 A.

(5) ἀλλὰ μὴν καὶ τὰ σχήματα καὶ τὰ χρώματα καὶ τὰ μεγέθη καὶ τὰ βαρέα καὶ ὅσ' ἄλλα κατηγορεῖται τοῦ σώματος, ὥσανεὶ συμβεβηκότα ἢ πᾶσιν ἢ τοῖς ὁρατοῖς καὶ κατὰ τὴν αἴσθησιν αὐτοῖς γνωστοῖς, οὐθ' ὡς καθ' ἑαυτὰς εἰσι φύσεις δοξαστέον· οὐ γὰρ δυνατόν ἐπινοῆσαι τοῦτο· οὐθ' ὅλως ὡς οὐκ εἰσίν, οὐθ' ὡς ἕτερα ἢ τινα προσυπάρχοντα τούτῳ ἀσώματα, οὐθ' ὡς μόρια τούτου, ἀλλ' ὡς τὸ ὅλον σῶμα καθόλου μὲν ἐκ τούτων ἀπάντων τὴν ἑαυτοῦ φύσιν ἔχον αἰδίου.

DIAGENES LAERTIUS x §§ 68, 69.

FRIDAY, June 5, 1885. 9—12.

WRITE an Essay upon **one** of the following subjects.

1. Theories of polity and law in the fifth and fourth centuries B.C.

2. The influence of the Pythagoreans, Parmenides, and Aristotle upon idealism.

3. ἐπεὶ δὲ πολλὴ στάσις ἐστὶ καὶ οἱ μὲν φασὶν αὐτὸν [sc. Plato] δογματίζειν, οἱ δ' οὐ, φέρε καὶ περὶ τούτων διαλάβωμεν.

DIAG. LAERT. III 51.

4. The causes of the decline of metaphysical speculation after the death of Aristotle.

SECTION C.

SATURDAY, June 6, 1885. 9—12.

ROMAN HISTORY FROM THE BATTLE OF PHARSALIA TO
THE DEATH OF TIBERIUS.

[Brackets are used to mark alternative questions, of which one only is to be attempted.]

1. {
 - (a) With what intentions were (i) *leges Iulia et Papia Poppaea* (ii) *leges Aelia Sentia et Fufia* [*Furia*] *Caninia* passed? Give a sketch of the main provisions of each.
 - (b) Describe the religious policy of Augustus throughout the empire, and its effects; illustrating your remarks in particular by the case of Gaul.
 - (c) Describe the provincial organization of Gaul (i) as left by Caesar, (ii) as established by Augustus, (iii) as modified by Tiberius.
2. Describe briefly one of the following
 - (a) The various kinds of Imperial *procuratores*.
 - (b) The general organization of a frontier army.
 - (c) The chief commercial centres and trade routes.
 - (d) The public buildings and works of Agrippa.
3. {
 - (a) GAIUS I § 5 *constitutio principis est quod imperator decreto vel edicto vel epistula constituit. nec umquam dubitatum est quin id legis vicem optineat, cum ipse imperator per legem imperium accipiat.*
[ex fragmento legis de imperio Vespasiani] utique quibus legibus plebeive scitis scriptum fuit ne divus Aug Tiberiusve Iulius Caesar Aug Tiberiusque Claudius Caesar Aug Germanicus tenerentur iis legibus plebisque scitis Imp Caesar Vespasianus solutus sit quaeque ex quaque lege rogatione Divum Aug Tiberiumve Iulium Caesarem Aug Tiberiumve Claudium Caesarem Aug Germanicum facere oportuit ea omnia Imp Caesari Vespasiano Aug facere liceat.
 Discuss the constitutional bearing of these extracts.
 - (b) MON ANCYR 6¹²⁻¹⁵ in consulatu sexto et septimo bella ubi civilia extinxeram per consensum universorum potitus rerum omnium rem publicam ex mea potestate in senatus populiue Romani arbitrium transtuli.
 TAC *ann* III 28 sexto demum consulatu Caesar Augustus potentiae securus quae triumviratu iusserat abolevit deditque iura quis pace et principe uteremur.
 Translate and comment on these extracts.
4. Translate and examine in detail the following inscription, (a) explaining the significance of the several titles (b) commenting on anything that seems noteworthy in their order (c) determining the date of the inscription, and shewing by what steps you reach your conclusion.

IMP · CAESARI | DIVI · F · AVGUSTO | PONTIFIC · MAXIMO |
 PATRI · PATRIAE · AVG · XV · VIR · S · F · VII · VIR · EPVLON |
 COS · XIII · IMP · XVII* · TRIBVNIC · POTEST · XXX

* xvi is proposed here: the inscription is only preserved in a copy.

5. (a) S LUKE 2 §§ 1, 2 ἐγένετο δὲ ἐν ταῖς ἡμέραις ἐκείναις, ἐξῆλθε δόγμα παρὰ Καίσαρος Αὐγούστου, ἀπογράφεσθαι πᾶσαν τὴν οἰκουμένην. αὕτη ἡ ἀπογραφὴ πρώτη ἐγένετο ἡγεμονεύοντος τῆς Συρίας Κυρηναίου.
Discuss briefly the chronological questions that arise out of this passage.
- (b) SUTONIUS *Iulius* 41 recensum populi nec more nec loco solito sed vicatim per dominos insularum egit.
ibid 43 peregrinarum mercium portoria instituit.
TACITUS *annals* II 36.....nam censuit in quinquennium magistratuum comitia habenda, utque legionum legati, qui ante praeturam ea militia fungebantur, iam tum praetores destinarentur; princeps duodecim candidatos in annos singulos nominaret.
Translate and explain the matters of note in these passages.

6. CICERO, *Philippic* III § 21 quid est aliud de eo referre non audere qui contra se consulem exercitum duceret nisi se ipsum hostem iudicare? necesse erat enim alterutrum esse hostem; nec poterat aliter de adversariis iudicari ducibus. si igitur Caesar hostis, cur consul nihil referat ad senatum? sin ille a senatu notandus non fuit, quid potest dicere quin, cum de illo tacuerit, se hostem confessus sit?

Explain clearly the point of the above extract.

7. (a) DION LII 23 λαμβανέτωσαν δὲ μισθὸν πάντες οὗτοι οἱ τὰς ἔξω τῆς πόλεως ἀρχὰς ἐπιτρεπόμενοι * * * * οὔτε γὰρ ἀπὸ τῶν οἰκείων οἶόν τέ ἐστιν αὐτοὺς ἐν τῇ ἀλλοτρίᾳ ἀποζῆν οὔτ' ἀορίστῳ καὶ ἀσταθμῇ ἀναλάματι ὥσπερ νῦν χρήσθαι. καὶ ἀρχέτωσαν μήτε ἑλαττον ἐτῶν τριῶν, εἰ μὴ τις ἀδικήσειέ τι, μήτε πλεῖον πέντε * * * *
Translate and make clear the drift of these words. Into whose mouth are they put, and what historical value do you attach to them?

- (b) HORACE *carm* IV 15
- | | |
|-----------------------------------|---------------------------------------|
| custode rerum Caesare non furor | nosque et profestis lucibus et sacris |
| civilis aut vis exigit otium, | inter iocosi munera Liberi, |
| non ira quae procudit enses | cum prole matronisque nostris |
| et miseras inimicat urbes. | rite deos prius adprecanti, |
| non qui profundum Danuvium bibunt | virtute functos more patrum duces |
| edicta rumpent Iulia, non Getae, | Lydis remixto carmine tibiis |
| non Seres infidive Persae, | Troiamque et Anchisen et almae |
| non Tanain prope flumen orti. | progeniem Veneris canemus. |
- Comment on this, pointing out all the touches and allusions by which it serves to illustrate the conditions of the time and the feelings of the society to which the writer belonged.

8. VELLEIUS II 99 § 1 brevi interiecto spatio Ti Nero duobus consulatibus totidemque triumphis actis tribuniciae potestatis consortione aequatus Augusto, civium post unum, et hoc quia volebat, eminentissimus, ducum maximus fama fortunaque celeberrimus et vere alterum rei publicae lumen et caput, mira quadam et incredibili atque inenarrabili pietate, cuius causae mox detectae sunt, cum C Caesar sumpsisset iam virilem togam Lucius item maturus esset viribus, ne fulgor suus orientium iuvenum obstaret initiis, dissimulata causa consili sui commeatum ab socero atque eodem vitrico adquiescendi a continuatione laborum petiit.

Comment on this as a description of fact.

SATURDAY, June 6, 1885. 1½—4½.

[Brackets are used to mark alternative questions, of which one only is to be attempted.]

GREEK LAW.

1. DESCRIBE fully the process by which ψηφίσματα and νόμοι were passed at Athens.

2. Explain the legal status of

(a) περίοικοι in Laconia,

(b) μέτοικοι in Athens.

3. What were δίκαι ἀπὸ συμβόλων?

4. Under what circumstances was an estate ἀνεπίδικος by Attic law?

ἐγὼ δ' εἰ μὲν ἐώρων ὑμᾶς μᾶλλον ἀποδεχομένους τὰς διαμαρτυρίας ἢ τὰς εὐθυδικίας, κἂν μάρτυρας προὔβαλοίμην μὴ ἐπίδικον εἶναι τὸν κλῆρον ὡς ποιησαμένου με υἱὸν Ἀπολλοδώρου κατὰ τοὺς νόμους. IS. VII 3.

Comment on this.

5. Give a summary of Attic law on the subject of heiresses.

6. Translate and explain one of the following

(a) ὁ μόνος ἡμῖν τῶν ἀμφισβητεῖν παρεσκευασμένων οὐκ ἐνῆν, διομολογήσασθαι πρὸς ἀλλήλους. τῇ μὲν γὰρ Εὐβουλίδου θυγατρὶ καὶ τῇ Ἀγνίου μητρὶ πρὸς ἡμᾶς ἀγωνιζόμεναις, μὴ κατὰ ταῦτ' ἀμφισβητούσαις, ἐνῆν ποιήσασθαι συνθήκας, ἂν ἡ ἑτέρα νικᾷ, μετεῖναι τι καὶ τῇ ἡττηθείσῃ καδίσκος γὰρ ἔμελλεν ἑκατέρᾳ τεθῆσεσθαι. τὸ δ' ἡμέτερον οὐ τοιοῦτον ἦν, ἀλλ' ἐν τῷ γένος, δύο δὲ λήξεις, ἡμικληρίου ἑκατέρῃ· τοῖς δὲ κατὰ ταῦτ' ἀμφισβητούσιν εἰς τίθεται καδίσκος, οὐ οὐκ ἂν ἦν τὸν μὲν ἡττᾶσθαι τὸν δὲ νικᾶν, ἀλλ' ὁμοίως ἀμφοτέροις ἦν ὁ αὐτὸς κίνδυνος, ὥστ' οὐκ ἐνῆν κοινωνίαν οὐδὲ διομολογίαν ποιήσασθαι περὶ αὐτῶν. IS. XI 20, 21.

(b) καὶ οἱ φράτερες, ὧς ἄνδρες δικασταί, οἱ τουτουὶ Μακαρτάτου, οἱ ἄριστα εἰδότες περὶ τοῦ γένους, ὁρῶντες αὐτὸν μὲν τοῦτον οὐκ ἐθέλοντα κινδυνεύειν οὐδ' ἀπάγοντα τὸ ἱερεῖον ἀπὸ τοῦ βωμοῦ, εἰ μὴ προσηκόντως εἰσήγετο ὁ παῖς οὐτοσί, αὐτοὺς δ' ἀξιούντα ἐπιорκεῖν, λαβόντες τὴν ψήφον καομένων τῶν ἱερέων, ἀπὸ τοῦ βωμοῦ φέροντες τοῦ Διὸς τοῦ φρατρίου, παρόντος τουτουὶ Μακαρτάτου, ἐψηφίσαντο τὰ δίκαια, ὧς ἄνδρες δικασταί, ὁρθῶς καὶ προσηκόντως τὸν παῖδα τουτουὶ εἰσάγεσθαι Εὐβουλίδῃ υἱὸν εἰς τὸν οἶκον τὸν Ἀγνίου. DEM. Macart. 14, 15.

ROMAN LAW TO THE DEATH OF AUGUSTUS.

1. (a) TRACE the growth of the Roman criminal courts down to the time of Cicero, making clear the basis on which the power of the different kinds of courts severally rested and the sentences they were severally competent to award.

(b) Examine the truth of Cicero's charge against the Roman jurists (*pro Mur* § 27)

in omni denique iure civili aequitatem reliquerunt, verba ipsa tenuerunt.

What in fact was the tendency of their influence on the development of the Civil law, and how did their influence make itself practically felt?

2. Translate the following fragments from the XII tables

si intestato moritur cui suus heres nec escit, adgnatus proximus familiam habeto.

si adgnatus nec escit, gentiles familiam habento.

Explain *suius heres*, *familia*, *adgnatus*, *gentilis*.

3. Make clear the legal relation in which a Roman citizen of Cicero's time would stand to each of the persons scheduled below—that is, which of them are to him Agnates or Cognates or neither, and which of them (i) is or (ii) is not or (iii) may or may not be under his *potestas*.

his mother if (a) widow, or (b) married again.

his wife.

his son if (a) single, or (b) married, and his family.

his daughter if (a) single, or (b) married, and her family.

his brother if (a) single, or (b) married, and his family.

his sister if (a) single, or (b) married, and her family.

his adopted son if (a) single, or (b) married, and his family.

his son adopted by another if (a) single, or (b) married, and his family.

his slave.

4. *in Catil* I § 4 simili senatus consulto C Mario et L Valerio consulibus est permissa res publica.

in Catil I § 20 refer, inquis, ad senatum: id enim postulas et si hic ordo sibi placere decreverit te ire in exilium obtemperaturum te esse dicis.

in Catil III § 8 fidem publicam iussu senatus dedi.

in Catil IV § 5 ...deinde quod P Lentulum se abdicare praetura coegistis, tum quod eum et ceteros de quibus iudicastis in custodiam dandos censuistis.

Examine these passages, considering the legal questions that they suggest by the light of the information got from other passages.

5. *pro Rab* § 8 an de peculatu facto aut de tabulario incenso longa oratio est expromenda?

Explain this, and give a short account of (a) the nature of *peculatus*, and the crimes connected therewith, down to the death of Caesar, (b) the procedure employed in trials under this head at the time of the speech *pro Rabirio*.

6. { (a) Under what law was Sulla tried? Compare the crime with which he was charged by Torquatus with *maiestas* so far as you can make out the conceptions implied in the names. What consideration probably determined Torquatus' choice of a court in which to proceed?
- (b) *in Catil* II § 5 ...ex eis qui vadimonia deserere quam illum exercitum maluerunt: quibus ego.....si edictum praetoris ostendero, concident.
- pro Sulla* § 56 tum autem illo profecto Sulla procurante eius rem et gerente.....P Sitti praediis venditis aes alienum eiusdem est dissolutum.
- Comment on the legal points involved in these passages.

MONDAY, June 8, 1885. 9—12.

GRECIAN HISTORY, 387—336 B.C.

All the Greek extracts (except in question 7) are to be translated; with explanations, and criticisms of the historical statements therein contained. Bracketed questions are alternative.

1. {
 - a. WHAT are our authorities for the life of Epaminondas?
 Πλὴν Ἐπαμεινώνδαν μὲν ἔνιοι λέγουσιν ὀκνοῦντα γεῦσαι τῶν κατὰ θάλασσαν ὀφελειῶν τοὺς πολίτας, ὥπως αὐτῷ μὴ λάθωσιν ἀντὶ μονίμων ὀπλιτῶν, κατὰ Πλάτωνα, ναῦται γενόμενοι καὶ διαφθαρέντες, ἀπρακτοὶ ἐκ τῆς Ἀσίας καὶ τῶν νήσων ἀπελθεῖν ἐκουσίως. PLUT. *Philopoimenes*.
 Discuss the date of Epaminondas' naval expeditions, and the extent of their results.
 - b. Recount the circumstances under which the Eleians were deprived of the control of the 104th Olympic festival; and those under which they were subsequently reinstated in their privileges. Discuss in connexion with this the state of religious feeling in Greece at this time.
2. {
 - a. Θαυμάζω δὲ Λακεδαιμονίους πάντων μάλιστα, τίνι ποτὲ γνώμῃ χρώμενοι καιομένην τὴν Ἑλλάδα περιορῶσιν, ἡγέμονες ὄντες τῶν Ἑλλήνων οὐκ ἀδίκως.
 Mention the different views that have been held about the date of the speech from which this is an extract, giving the leading arguments for each view.
 - b. Give a brief epitome of Isokrates' speech *de Pace* (λόγος συμμαχικός), and consider the circumstances under which it was composed.
3. {
 - a. Give some account of the state of the Attic drama, and of the histrionic profession during this period.
 - b. Give some account of the chief contemporary historians, in Eastern and Western Greece, who dealt with this period, considering the chief influences, literary and political, by which they were affected.

4. a. Give a summary of what is known of events in Egypt and in Asia Minor during the last few years of the reign of Artaxerxes Mnemon, and the first few years of that of Ochus.

Τῶν γὰρ Αἰγυπτίων ἀπὸ Περσῶν ἀποστάντων κατὰ τοὺς ἀνωτέρω χρόνους, Ἀρταξέρξης ὁ ἐπικληθεὶς Ὀχός, αὐτὸς μὲν οὐκ ὦν φιλοπόλεμος, ἐφ' ἡσυχίας ἔμενεν, ἀποστέλλων δὲ δυνάμεις καὶ στρατηγοὺς πολλάκις ἀπετύγγανε διὰ τὴν κακίαν καὶ ἀπειρίαν τῶν ἡγεμόνων. διὸ καὶ καταφρουθεὶς ὑπὸ τῶν Αἰγυπτίων ἠναγκάζετο καρτερεῖν διὰ τε τὴν ἀργίαν καὶ τὸ τῆς ψυχῆς εἰρηνικόν. κατὰ δὲ τοὺς ὑποκειμένους καιροὺς τῶν Φοινίκων καὶ τῶν ἐν Κύπρῳ βασιλέων μιμησομένων τοὺς Αἰγυπτίους, καὶ διὰ τὴν καταφρόνησιν ἐπὶ τὴν ἀπόστασιν ὀρμησάντων, παροξυνθεὶς ἔκρινε πολεμεῖν τοὺς ἀφεστηκότας. τὸ μὲν οὖν στρατηγὸς ἐκπέμπειν ἀπέδοκίμασε, δι' ἑαυτοῦ δὲ τοὺς ὑπὲρ τῆς βασιλείας ἀγῶνας ποιήσασθαι διέγνω.

DIODOROS XVI. 40.

- b. Draw a map of Sicily, marking the chief Greek towns, and the chief battle-sites and frontier-lines memorable in connexion with the struggle against Carthage during this period.

(λέγοντες ὥς) εἰ τὰς ἐξηρημωμένας Σικελίας πόλεις κατοικίσει νόμοις τε ξυνδήσειε καὶ πολιτείαις, ὥστε αὐτῷ τε οἰκείας καὶ ἀλλήλαις εἶναι πρὸς τὰς τῶν βαρβάρων βοηθείας, οὐ διπλάσιαν τὴν πατρίαν ἀρχὴν μόνον ποιήσοι, πολλαπλάσιαν δὲ ὄντως· ἔτοιμον γὰρ εἶναι τούτων γενομένων πολὺ μᾶλλον δουλώσασθαι Καρχηδονίους τῆς ἐπὶ Γέλωνος αὐτοῖς γενομένης δουλείας, ἀλλ' οὐχ ὥσπερ νῦν τούναντίον ὁ πατήρ αὐτοῦ φόρον ἐτάξατο φέρειν τοῖς βαρβάροις. [PLATO] Ep. VII 332 E.

5. a. Ἐπιχειρήσαντος Ἀπολλοδώρου τινὸς πάλιν αὐτὰ (τὰ θεωρικά) ποιεῖν στρατιωτικά, βουλόμενος Εὐβουλὸς ὁ πολιτευόμενος, δημαγωγὸς ὢν, πλείονα εὐνοίαν ἐπισπάσασθαι τοῦ δήμου πρὸς ἑαυτόν, ἔγραψε νόμον τὸν κελεύοντα θανάτῳ ζημιοῦσθαι εἴ τις ἐπιχειροίη μεταποιεῖν τὰ θεωρικά στρατιωτικά. Schol. ad DEM. Ol. i.

Describe the successive steps by which Demosthenes renewed the attempt of Apollodoros, up to the time when the policy he had urged was adopted.

- b. Ὅμῃν παρὰ τὰς εἰσφοράς τὰς ἀπὸ Ναυσινίκου, παρ' ἴσως τάλαντα τριακόσια ἢ μικρῷ πλείω, ἔλλειμμα τέτταρα καὶ δέκα ἐστὶ τάλαντα· ὧν ἐπὶ οὗτος εἰσέπραξεν. DEM. Androtion.

Shew the nature of the light cast by the speech against Androtion on Athenian finance.

Compare the revenue of the Athenian confederacy at the archonship of Nausinikos, at the time of the speech against Androtion, and at the time of the peace of Philokrates.

6. Consider the attitude of the leading Athenian statesmen during the two or three years immediately following the peace of Philokrates.

To what extent can the existence of defined parties at this time among the Athenian people be made out?

[These extracts need not be translated.]

7. What is the source, and what the authority, of the two documents (A and B) from which these extracts are taken? Give a summary of the sense, commenting on any points of interest or difficulty.

A. Σπαρτόκῳ, Παιρισάδῃ,
Ἀπολλωνίῳ, Λεύκωνος παισὶ
Ἐπὶ Θεμιστοκλέους ἄρχοντος
ἐπὶ τῆς Αἰγιῆδος ὀγδόης πρυ-
τανείας, ἣ Λυσίμαχος Σωσιδῆ[μ-
ου Ἀχα]ρ[ν]εὺς ἐγραμμάτευε Θε[ό-
φίλος Ἀλι]μούσιος ἐπεστάτε[ι],
Ἀνδροτίων Ἀνδρωνος Γαργήτιος εἶπεν.

εἶναι [Σπ]α[ρτ]ό[κ]ῳ [κ]αὶ Παιρισάδῃ τὰς δ-
ωρείας ἃς ὁ δῆμος ἔδωκε Σατύρῳ καὶ Λεύκω-
νι καὶ στεφανῶσαι χρυσῷ στεφάνῳ Παναθη-
ναίοις το[ῖς μεγ]άλαις ἀπὸ χιλίων δραχμῶν
ἐκάτερ[ο]ν.

τὸ δὲ ἀργύριον διδόναι το-
ῖς ἀθλοθέταις εἰς τοὺς στεφάνους τὸν τοῦ
δήμου ταμίαν ἐκ τῶν εἰς τὰ κατὰ ψηφίσματα
τῷ δήμῳ μεριζομένων· τὸ δὲ νῦν εἶναι παρ-
αδοῦναι τοὺς ἀποδέκτας τὸ εἰς τοὺς στεφ[ά]-
νους ἐκ τῶν στρατιωτικῶν χρημάτων.

περὶ δὲ τῶν χρημάτων τῶν [ὀφ-
ει]λ[ο]μένων τοῖς παισὶ τοῖς Λεύκωνος ὅπ[ως
ἂν] ἀπολάβωσιν, χρηματίσαι τοὺς προέδ[ρους
οἱ] ἂν λάχωσι προεδρεύειν ἐν τῷ δήμῳ [τῇ
ὀγ]δῷ ἐπὶ δέκ[α] πρῶτον μετὰ τὰ ἱερά, ὅ[πως ἂ-
ν] ἀπολαβόντες τὰ χρήματα μὴ ἐγκαλῶσ[ι τῷ]
δήμῳ τῷ Ἀθηναίων· δοῦναι δ[ὲ τὰ]ς ὑπ[ὲρ]ρεσί-
α]ς ἃς αἰτοῦσι Σπάρτοκος καὶ Παιρισ[άδης, τ-
οῦ]ς δὲ πρ[έ]σβεις ἀπογράψαι τὰ ὀνόμα[τα τῶν
ὑπ]ηρ[ε]σιῶν ὧν ἂν λάβωσιν τῷ γραμμα[τεῖ τῇ]-
ς βουλῆς· οὓς δ' ἂν ἀπογράψωσιν, εἶνα[ι ἐν τῷ]
τ[ε]τ[ρ]αγμένῳ ποιούντας ἀγαθὸν ὅτι [ἂν δύνω]-
νται τοὺς παῖδας τοὺς Λεύκωνος.

B. Ἐπὶ ἱερομνάμονος Βοσπορίχῳ Δαμάγητος ἐν τῇ ἀλίᾳ ἔλεξεν, ἐκ τῆς
βωλᾶς λαβὼν ῥάτραν, ἐπειδὴ ὁ δῆμος ὁ Ἀθηναίων ἐν τε τοῖς προγεγεναμένοις
καιροῖς εὐνοέων διατελεῖ Βυζαντίοις καὶ τοῖς συμμάχοις καὶ συγγενέσι Περυνθίοις
καὶ πολλὰς καὶ μεγάλας χρείας παρέσχηται, ἐν τε τῷ παρεστακότι καιρῷ Φιλίππῳ
τῷ Μακεδόνος ἐπιστρατεύσαντος ἐπὶ τὰν χώραν καὶ τὰν πόλιν ἐπ' ἀναστάσει Βυζαν-
τίων καὶ Περυνθίων καὶ τὰν χώραν δαίοντος καὶ δενδροκοπέοντος, βοηθήσας πλοίοις
ἐκατὸν καὶ εἴκοσι καὶ σίτῳ καὶ βέλεσι καὶ ὀπλίταις ἐξείλετο ἀμὲ ἐκ τῶν μεγάλων
κινδύνων καὶ ἀποκατέστασε τὰν πατρίον πολιτείαν καὶ τῶς νόμῳ καὶ τῶς τάφῳ,
δεδοχθαι τῷ δάμῳ τῷ Βυζαντίων καὶ Περυνθίων Ἀθηναίοις δόμεν ἐπιγαμίαν, πολιτείαν,
ἐγκτασιν γᾶς καὶ οἰκίαν, προεδρίαν ἐν τοῖς ἀγῶσι, πόθοδον ποτὶ τὰν βωλάν καὶ τὸν
δῆμον πρᾶτοις μετὰ τὰ ἱερά, καὶ τοῖς κατοικέειν ἐθέλουσι τὰν πόλιν ἀλειουργήτοις
ἡμεν πασᾶν τὰν λειτουργίαν.

MONDAY, June 8, 1885. 1½—4½.

[Brackets are used to mark alternative questions, of which one only is to be attempted.]

GREEK HISTORY.

1. { (a) TRACE up as far as you can the causes that produced the isolation of the Greek states, and shew how far the claims of Athens to empire were a violation of Greek sentiment.
(b) Describe briefly the main features of the earlier 'age of Tyrants' in Greece, considering the origin and nature of their power and the position of Literature in Greece during this period and after their fall.
2. { (a) Write a clear and critical account of the interference of Athens in Sicilian affairs 427—416 BC.
(b) Trace the influence of the oligarchic party in Athens 430—411 BC.
3. { (a) Describe the nature and effects of the supremacy of Sparta 404—371 BC.
(b) What do we know of the mutual relations of the Boeotian towns and the effects of external interference thereon from 509 to 387 BC?
4. Examine the following
 - (a) τοῖς χρόνοις τοίνυν οὕτω φαίνεται γεγονῶς ὥστε εἰ καὶ κατὰ θάτερα ἀστὸς ἦν, εἶναι πόλιν προσήκειν αὐτόν· γέγονε γὰρ πρὸ Εὐκλείδου.
DEM *Eubul* p 1307.
 - (b) ὁστρακισμὸς φυγῆς διαφέρει ὅτι τῶν μὲν φυγῆς ἀλόντων αἱ οὐσίαι δημεύονται τῶν δὲ ὁστρακισμῷ ἀποστάντων οὐκ ἀφαιρεῖται τὰ χρήματα ὁ δῆμος καὶ τοῖς μὲν χρόνος ἐνδείκνυται καὶ τόπος, οἱ δὲ φεύγοντες οὐδέτερον τούτων ἔχουσιν.
SUIDAS.

ROMAN HISTORY.

1. "No period of Roman history since the first institution of the tribunes of the commons is really more obscure than the thirty years immediately following the retreat of the Gauls."

ARNOLD.

Discuss this statement, and the grounds on which it rests.

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2. { (a) Trace the gradual extension of the tribe-system in the Roman constitution.
(b) Give an account of the chief sources of Roman revenue, up to the time of the abolition of the *tributum*.
 3. { (a) Shew by means of a map the courses of the great Roman roads in Italy existing at (about) 150 B.C. Explain the circumstances and objects of their original construction, and chief subsequent extensions down to the above date, and point out the connexion between these operations and the foundation of colonies.
(b) Sketch the history of Roman tragedy during the republic.
 4. { (a) Explain the social position and influence of the Jewish nation in the early Roman empire, and the causes which led to the destruction of Jerusalem by Titus.
(b) On what occasions before A.D. 180 and from what motives did persecutions of Christians take place?
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TUESDAY, *June* 9, 1885. 9—12.

SUBJECTS FOR ESSAYS.

1. "NOTHING is more characteristic of that age (the 4th century B.C.) than the new tendency in favour of monarchy." JEBB.

Consider the principal examples of personal government in the Greek world at this time; and compare the causes which led to the triumph of personal government in Greece with those that produced a like result in Rome.

2. Religious mysteries and brotherhoods in Greece.

3. The political and social state of the Greek world as shewn in the story of the Ten Thousand.

4. Ancient conceptions of the function of a historian as illustrated by Thucydides and Livy.

5. Conditions of education and life of Vergil and Lucan as affecting their poems.

6. Means of investment of money at Rome in the time of Cicero, and the difficulty of forming a real middle-class.

SECTION D.

WEDNESDAY, June 3, 1885. 9—12.

HISTORY OF ART.

(Five questions at least should be attempted.)

1. GIVE some account of the additions to our knowledge of early Greek art which have been furnished by recent excavations on *one* of the following sites:—Delos, Ialysus, Mycenae.

2. αὐτὸ δὲ ἐλέφαντος τὸ ἄγαλμα καὶ χρυσοῦ πεπολῆται· μέσφ μὲν οὖν ἐπίκειται οἱ τῷ κράνει Σφυγγὸς εἰκῶν· ἃ δὲ ἐς τὴν Σφίγγα λέγεται γράψω προελθόντος ἐς τὰ Βοιωτιά μοι τοῦ λόγου, καθ' ἑκάτερον δὲ τοῦ κράνους γρύπες εἰσιν ἐπειργασμένοι.

PAUSANIAS I. 24, 5.

What monumental evidence have we as to the details and style of the *head* thus described? What is the date and value of that evidence?

3. Polyclitus Sicyonius Ageladae discipulus diadumenum fecit molliter iuvenem centum talentis nobilitatum, idem et doryphorum viriliter puerum; fecit et quem canona artifices vocant, liniamenta artis ex eo petentes veluti a lege quadam, solusque hominum artem ipsam fecisse artis opere iudicatur; fecit et destringentem sese et nudum talo incessentem.

PLINY N. H. XXXIV. 55.

Compare Pliny's phrases with the statues with which they are commonly connected. What is the present state of knowledge on this matter?

4. τὸ δὲ τῶν ἀγαλμάτων πλῆθος οὐ δυνατόν ἐξηγήσασθαι· πάντων γὰρ τῶν παρ' ἀνθρώποις λεγομένων ἢ νομιζομένων θεῶν ἢ δαιμόνων, προσέτι δὲ ἡρώων, εἰδῶλα διήγητο, τὰ μὲν κεχρυσωμένα τὰ δ' ἡμφιεσμένα στολαῖς διαχρύσοις. καὶ πᾶσι τούτοις οἱ προσήκοντες μῦθοι κατὰ τὰς παραδεδομένας ἱστορίας ἐν διασκευαῖς πολυτελέσι παρέκειντο. εἴπετο δ' αὐτοῖς καὶ νυκτὸς εἰδῶλον καὶ ἡμέρας γῆς τε καὶ οὐρανοῦ καὶ ἡοῦς καὶ μεσημβρίας.

ATHENAEUS, v. p. 195 A.

Determine from internal evidence the kind of art with which we here have to do, and its approximate date.

5. Accurately describe the subject of the vase picture laid before you. Comment on any noteworthy points of arrangement or treatment.

6. Describe in detail the Greek coins, of which casts marked A to F are set before you, assigning to each a date and a place of mintage.

7. Carefully describe the cast of a gem set before you. Illustrate from it the characteristics of the gem-engraving of the period.

8. ...S. Tadio divi Augusti aetate qui primus instituit amoenissimam parietum picturam, villas et porticus ac topiaria opera, lucos, nemora, collis, piscinas, euripos, amnis, litora, qualia quis optaret, varias ibi obambulantium species aut navigantium terraeque villas adeuntium asellis aut vehiculis, iam piscantis, aucupantis aut venantis aut etiam vindemiantis. sunt in eius exemplaribus nobiles palustri accessu villae, succollatis sponsione mulieribus labantes, trepidis quae feruntur, plurumae praeterea tales argutiae facetissimi salis. idem subdialibus maritimas urbis pingere instituit, blandissimo aspectu minumoque inpendio.

PLINY N. H. XXXV. 116.

Comment on the above passage and illustrate it from extant ancient paintings.

9. Trace briefly the development of the arch in Roman building, and give examples of it in its various stages.

WEDNESDAY, June 3, 1885. 1.30—4.30.

MYTHOLOGY AND RELIGIOUS USAGES.

(Five questions at least should be attempted.)

1. WHAT functions are attributed to Apollo in the *Iliad*? Can you explain historically the view taken of the deity by Homer as compared with that which prevailed later?

2. Mention two or three local and special cults of Zeus in Greek cities which were causes of the development of special artistic types of that deity; and shew the connexion in each case of myths and types.

3. *πάντας δὲ βωμούς οἱ κατ' Ἀδμήτου δόμους
προσῆλθε κύξέστεψε καὶ προσήξατο
πτόρθων ἀποσχίζουσα μυρσίνης φόβην.*

EURIP. *Alcestis*, l. 170.

Whereabouts were the βωμοί in wealthy Greek houses? To what deities were they dedicated and what rites took place at them?

4. Translate:

*αὐτίκα δ' ἔγνω
Κίρκη φύξιον οἶτον ἀλιτροσύνας τε φόνοιο.
τῷ καὶ ὀπιζομένη Ζηνὸς θέμιν Ἰκεσίλοιο,
ὃς μέγα μὲν κοτέει, μέγα δ' ἀνδροφόνοισιν ἀρήγει,
ρέξε θνηπολίην, οἷη τ' ἀπολυμαίνονται
νηληεῖς ἰκέται, ὅτ' ἐφέστιοι ἀντιώωσιν.
πρῶτα μὲν ἀτρέπτοιο λυτήριον ἦγε φόνοιο
τειναμένη καθύπερθε συὸς τέκος, ἧς ἔτι μαζοὶ
πλήμυρον λοχίης ἐκ νηδύος, αἵματι χεῖρας
τέγγεν, ἐπιτμήγουσα δέρην· αὐτὶς δὲ καὶ ἄλλοις
μείλισσεν χύτλοισι, καθάρσιον ἀγκαλέουσα
Ζῆνα, παλαμναίων τιμήορον ἰκεσιδάων.
καὶ τὰ μὲν ἀθρόα πάντα δόμων ἐκ λύματ' ἔνεικαν
νημάδες πρόπολοι, ταί οἱ πόρσυνον ἕκαστα.
ἦ δ' εἴσω πελανοὺς μείλικτρά τε νηφαλίσιν
καῖεν ἐπ' εὐχολῆσι παρέστιος, ὄφρα χόλοιο
σμερδαλέας παύσειεν ἐρινύας, ἧδὲ καὶ αὐτὸς
εὐμειδῆς τε πέλοιτο καὶ ἥπιος ἀμφοτέροισιν,
εἴτ' οὖν ὀθνεῖν μεμιασμένοι αἵματι χεῖρας,
εἴτε καὶ ἐμφύλῳ προσκηδέες ἀντιώωσιν.*

APOLLONIUS RHOD. *Argon.* IV. 698—717.

Explain the meaning and object of the ceremonies here described. Cite parallel instances from history and poetry.

5. Write out in cursive text:

ΕΠΙΠΡΥΤΑΝ.
 . ΣΚΛΕΟΚΥΔΟΥΣΠΟΣΙΔΕΩΝΟΣΤΕΤΑΡ.
 . . ΕΞΕΙΚΑΔΟΣΕΓΝΩΣΑΝΚΛΥΤΙΔΑΙΤ.
 . ΕΡΩΙΟΙΚΛΙΤΩΙΚΛΥΤΙΔΩΝΕΝΩΙΤΑ.
 . ΤΡΩΙΑΙΕΡΑΚΑΘΗΤΑΙΚΑΙΤΩΙΧΩΡΩ.
 . . ΙΠΡΟΣΤΩΙΟΙΚΛΙΧΡΗΣΘΑΙΚΛΥΤΙ.
 . ΣΚΟΙΝΗΙΦΑΤΡΙΑΝΔΕΜΗΔΕΙΔΙΩΤΗ.
 . ΗΘΕΝΑΤΩΙΟΙΚΛΙΤΟΥΤΩΙΧΡΗΣΘΑΙ.
 . ΔΕΑΛΛΩΙΔΟΥΝΑΙΧΡΗΣΑΣΘΑΙΜΗΘΕ.
 . ΟΣΔΑΝΠΑΡΑΤΑΟΤΑΗΑΟΤΟΣΧΡΗΣΗΤ.
 . ΤΩΙΟΙΚΛΙΗΕΤΕΡΩΙΔΩΙΧΡΗΣΑΣΘΑ.
 . . ΠΟΔΟΤΩΚΑΘΕΚΑΣΤΗΝΧΡΗΣΙΝΗΔΟΣ.
 . . ΛΥΤΙΔΑΙΣΧΙΛΙΑΣΔΡΑΧΜΑΣΙΕΡΑ.
 . . ΥΔΙΟΣΤΟΥΠΑΤΡΩΙΟΥΚΑΙΤΑΙΣΕΚ.
 . . ΝΟΜΩΝΑΡΑΙΣΕΝΟΧΟΣΕΣΤΩΤΟΥΣΔ.
 . . ΜΕΛΗΤΑΣΤΑΣΓΕΝΟΜΕΝΑΣΓΝΩΜΑΣ.
 . . . ΤΟΥΟΙΚΟΥΚΑΙΤΩΝΙΕΡΩΝΚΑΙΤΑ.
 . . . ΜΑΝΤΕΙΑΣΑΝΑΓΡΑΨΑΝΤΑΣΕΙΣΣ.
 . . ΗΝΛΙΘΙΝΗΝΣΤΗΣΑΙΠΑΡΑΤΗΝΕΙΣ.
 . . ΝΤΟΥΟΙΚΟΥ

Bull. Corr. Hell. III. p. 48.

In what respects does this inscription (from Chios) throw light on the origin and organization of religious cults in Greece?

6. What kinds of questions were commonly put at the Greek oracles, such as Delphi and Dodona? What functions did these oracles perform in regard to public and private life?

7. Write a full commentary on the following extract from the *Fasti Amiterni*:

1 K · OCT · N ·
 FIDEI IN CAPITOLIO
 9 C GENIO PVBLIC FAVSTAE
 FELICITATI VENER VICTR
 11 MED · NP
 12 AVG · NP
 13 FONT · NP
 FERIAE FONTI
 14 EN

8. Describe in detail the coin of which a cast is set before you.

9. Give an account of the various foreign worships that became popular at Rome, and mention in the case of each worship any remarkable extant monument relating to it.

THURSDAY, June 4, 1885. 9—12.

(Three questions at least in each set should be attempted.)

A.

OLYMPIA.

1. MENTION some of the principal portraits (statues and heads) which have been found in the Olympian excavations, and indicate the characteristics of the different groups, and the light thrown by them on the history of ancient portrait sculpture.

2. Briefly compare the arrangement and execution of the two pediments of the temple of Zeus, drawing any conclusions which you may think warranted by the facts.

3. Trace briefly the history of the decline of the athletic contests which belonged to the Olympian festival, stating some of the reasons which probably led to that decline.

4. ὑπελθεῖν δὲ οὐχ οἷόν τέ ἐστιν ὑπὸ τὸν θρόνον, ὥσπερ γε [καὶ] ἐν Ἀμύκλαις ἐς τὸ ἐντὸς τοῦ θρόνου παρερχόμεθα· ἐν Ὀλυμπίᾳ δὲ ἐρύματα τρόπον τοίχων πεποιημένα τὰ ἀπείργοντά ἐστι. τούτων τῶν ἐρυμάτων ὅσον μὲν ἀπαντικρὺ τῶν θυρῶν ἐστὶν ἀληλιπται κυανῷ μόνον, τὰ δὲ λοιπὰ αὐτῶν παρέχεται Παναίνου γραφάς. ἐν δὲ αὐταῖς ἔστι μὲν οὐρανὸν καὶ γῆν Ἀτλας ἀνέχων, παρέστηκε δὲ καὶ Ἡρακλῆς ἐκδέξασθαι τὸ ἄχθος ἐθέλων τοῦ Ἀτλαντος, ἔτι δὲ Θησεύς τε καὶ Πειρίθους, καὶ Ἑλλάς τε καὶ Σαλαμῖς ἔχουσα ἐν τῇ χειρὶ τὸν ἐπὶ ταῖς ναυσὶν ἄκραϊς ποιούμενον κόσμον, Ἡρακλέους τε τῶν ἀγωνισμάτων τὸ ἐς τὸν λέοντα τὸν ἐν Νεμέᾳ, καὶ τὸ ἐς Κασσάνδραν παρανόμημα Αἴαντος, Ἱπποδάμειά τε ἢ Οἰνομάου σὺν τῇ μητρὶ, καὶ Προμηθεὺς ἔτι ἐχόμενος μὲν ὑπὸ τῶν δεσμῶν, Ἡρακλῆς δὲ ἐς αὐτὸν ἥρται· λέγεται γὰρ δὴ καὶ τότε ἐς τὸν Ἡρακλέα, ὡς ἀποκτείνει μὲν τὸν αἰετὸν ὃς ἐν τῷ Καυκάσῳ τὸν Προμηθεά ἐλύπει, ἐξέλειτο δὲ καὶ αὐτὸν Προμηθεά ἐκ τῶν δεσμῶν. τελευταῖα δὲ ἐν τῇ γραφῇ Πενθεσίλειά τε ἀφιεῖσα τὴν ψυχὴν καὶ Ἀχιλλεὺς ἀνέχων ἐστὶν αὐτήν, καὶ Ἑσπερίδες δύο φέρουσι τὰ μῆλα ὧν ἐπιτετράφθαι λέγονται τὴν φρουράν. Πάναινος μὲν δὴ οὗτος ἀδελφός τε ἦν Φειδίου, καὶ αὐτοῦ καὶ Ἀθήνησιν ἐν Ποικίλῃ τὸ Μαραθῶνι ἔργον ἔστι γεγραμμένον.

PAUSANIAS V, 11, 4—6.

Comment on any notable features of this barrier; if possible suggest an arrangement of the scenes according to the principles of Greek art usually followed in such cases.

5. Write out in cursive characters, with notes:—

ΑΦΡΑΤΡΑΤΟΣΑΝΑΙΤΟ·ΚΑΙΤΟ·
 ΜΕΤΑΠΙΟΣΘΙΛΙΑΝΓΕΝΤΑΚΟΝ
 ΤΑΦΕΤΕΑΚΟΠΟΤΑΡΟΙΜΕΝΓΕΔΕΟΙΑΝ
 ΑΠΟΤΟΒΟΜΟΑΠΟΦΕΛΕΟΙΑΝΚΑΤΟΙΓΡΟ
 ΧΕΛΟΙΚΑΙΤΟΙΜΑΝΤΙΕΡΑΙΤΟ·ΟΡΚΟΝ
 ΓΑΡΒΑΙΝΟΙΑΝΖΝΟΜΑΝΤΟΡ··ΟΛΥΑΟ
 ΤΟΛΥΑΝΓΙΑΙ

State any facts you may know as to the class of Olympian inscriptions to which this belongs.

B.

THE IMPERIAL FORUMS AND THE CAPITOLIUM.

1. Draw a plan shewing the probable extent and direction of the Imperial Forums. Mark the position of all the existing remains and give a brief description of them.

2. Translate and explain:

(a) nunc tua Cæsareis cinguntur limina donis,
et fora tot numeras, lane, quot ora geris.

MART. X, 28, 5.

(b) fœdaque Tarpeio conopia tendere saxo,
iura dare et statuas inter et arma Mari.

PROP. IV, 10, 46.

(c) DE · MANVBIIS
CIMBRIC · ET · TEVTON · AEDEM · HONORI · ET · VIRTVTI
VICTOR · FECIT.

C. I. L. I, Elogia xxxiii.

(d) tum diversos Capitolii aditus invadunt iuxta lucum asyli et qua Tarpeia
rupes centum gradibus aditur.

TAC. H. III, 71.

3. Carefully describe the coin, of which a cast is set before you.

State any general rules as to the representation of temples on Roman medals and coins.

4.]TATIVS·Q·F·Q·N·C[
]EN·SENT·FACIVNDV[
EIDEMQVE·ROB[

C. I. L. I, 591.

Complete and interpret the above inscription and state where and when it was found. Discuss the questions (a) whether or not it refers to the building commonly called the *tabularium*, and (b) whether this building bore the name of *tabularium* in classical times.

5. Interpret and discuss the drawing set before you.

Enumerate all the extant ancient representations of the temple of Jupiter Capitolinus, and state to which temple each refers.

THURSDAY, June 4, 1885. 1.30—4.30.

ANTIQUITIES.

(Five questions at least should be attempted.)

1. ἐπειδὴ δὲ εἰσῆλθομεν, κατελάβομεν Πρωταγόραν ἐν τῷ προστώῳ περιπατοῦντα, ἐξῆς δ' αὐτῷ συμπεριεπάτουν ἐκ μὲν τοῦ ἐπὶ θάτερα Καλλίας ὁ Ἴππονίκου καὶ ὁ ἀδελφὸς αὐτοῦ ὁ ὁμομήτριος, Πάραλος ὁ Περικλέους, καὶ Χαρμίδης ὁ Γλαύκωνος, ἐκ δὲ τοῦ ἐπὶ θάτερα ὁ ἕτερος τῶν Περικλέους Ξάνθιππος καὶ Φιλιππίδης ὁ Φιλομήλου καὶ Ἀντίμοιρος ὁ Μενδαῖος, ὅσπερ εὐδοκίμει μάλιστα τῶν Πρωταγόρου μαθητῶν καὶ ἐπὶ τέχνῃ μανθάνει, ὡς σοφιστῆς ἐσόμενος. τούτων δὲ οἱ ὀπίσθεν ἠκολούθουν ἐπακούοντες τῶν λεγομένων, τὸ μὲν πολὺ ξένοι ἐφαίνοντο, οὓς ἄγει ἐξ ἐκάστων τῶν πόλεων ὁ Πρωταγόρας, δι' ὧν διεξέρχεται, κηλῶν τῇ φωνῇ ὅσπερ Ὀρφεύς; οἱ δὲ κατὰ τὴν φωνὴν ἔπονται κεκλημένοι· ἦσαν δὲ τινες καὶ τῶν ἐπιχωρίων ἐν τῷ χορῷ. τοῦτον τὸν χορὸν μάλιστα ἔγωγε ἰδὼν ἦσθην, ὡς καλῶς εὐλαβοῦντο μηδέποτε ἐμποδῶν ἐν τῷ ἐμπρόσθεν εἶναι Πρωταγόρου, ἀλλ' ἐπειδὴ αὐτὸς ἀναστρέφοι καὶ οἱ μετ' ἐκείνου, εὖ πως καὶ ἐν κόσμῳ περισχίζοντο οὗτοι οἱ ἐπήκοοι ἐνθεν καὶ ἐνθεν, καὶ ἐν κύκλῳ περιόντες αἰεὶ εἰς τὸ ὀπίσθεν καθίσταντο κάλλιστα. τὸν δὲ μετ' εἰσενόησα, ἔφη Ὁμηρος, Ἴππῖαν τὸν Ἥλειον, καθήμενον ἐν τῷ κατ' ἀντικρὺ προστώῳ ἐν θρόνῳ· περὶ αὐτὸν δ' ἐκάθητο ἐπὶ βάθρων Ἐρυξίμαχος τε ὁ Ἀκουμενοῦ καὶ Φαῖδρος ὁ Μυρρινούσιος καὶ Ἄνδρων ὁ Ἀνδροτιάνος καὶ τῶν ξένων πολῖται τε αὐτοῦ καὶ ἄλλοι τινές. ἐφαίνοντο δὲ περὶ φύσεώς τε καὶ τῶν μετεώρων ἀστρονομικὰ ἅττα διερωτᾶν τὸν Ἴππῖαν, ὁ δ' ἐν θρόνῳ καθήμενος ἐκάστοις αὐτῶν διέκρινε καὶ διεξήκει τὰ ἐρωτώμενα. καὶ μὲν δὴ καὶ Τάνταλόν γε εἰσείδον. ἐπεδήμει γὰρ ἄρα Πρόδικος ὁ Κείος, ἦν δὲ ἐν οἰκῇματί τινι, ᾧ πρὸ τοῦ μὲν ὡς ταμειῷ ἐχρήτο Ἴππόνικος, νῦν δὲ ὑπὸ τοῦ πλήθους τῶν καταλόντων ὁ Καλλίας καὶ τοῦτο ἐκκενώσας ξένοις κατάλυσιν πεποίηκεν. ὁ μὲν οὖν Πρόδικος ἔτι κατέκειτο, ἐγκεκαλυμένος ἐν κωδίοις τισὶ καὶ στρώμασι καὶ μάλα πολλοῖς, ὡς ἐφαίνετο· παρεκάθητο δὲ αὐτῷ ἐπὶ ταῖς πλησίον κλῖναις Πανσανίας τε ὁ ἐκ Κεραμέων καὶ μετὰ Πανσανίου νέον τι ἔτι μεῖράκιον, ὡς μὲν ἐγὼμαι, καλὸν τε ἀγαθὸν τὴν φύσιν, τὴν δ' οὖν ιδεᾶν πάνυ καλός. ἔδοξα ἀκοῦσαι ὄνομα αὐτῷ εἶναι Ἀγάθωνα, καὶ οὐκ ἂν θαυμάζοιμι, εἰ παιδικὰ Πανσανίου τυγχάνει ὧν. τοῦτο ἦν τὸ μεῖράκιον, καὶ τὰ Ἀδειμάντω ἀμφοτέρω, ὃ τε Κήπιδος καὶ ὁ Λευκολοφίδου, καὶ ἄλλοι τινὲς ἐφαίνοντο· περὶ δὲ ὧν διελέγοντο οὐκ ἐδυνάμην ἔγωγε μαθεῖν ἔξωθεν, καίπερ λιπαρῶς ἔχων ἀκοίειν τοῦ Προδίκου· πάσσοφος γάρ μοι δοκεῖ ἀνὴρ εἶναι καὶ θεῖος· ἀλλὰ διὰ τὴν βαρύτητα τῆς φωνῆς βόμβος τις ἐν τῷ οἰκῇματι γιγνόμενος ἀσαφῆ ἔπολει τὰ λεγόμενα.

PLATO, *Protagoras* VII. p. 314 E.

Shew what were the interior arrangements of the house here spoken of and in what parts were the persons mentioned.

2. καὶ γυναικὸς δὲ τελευτησάσης ἐπιγράψαι ἐπὶ τὸ μνημα τοῦ τε ἀνδρὸς αὐτῆς καὶ τοῦ πατρὸς καὶ τῆς μητρὸς καὶ αὐτῆς τῆς γυναικὸς τοῦνομα καὶ ποδαπῇ ἐστὶ καὶ προσεπιγράψαι ὅτι οὗτοι πάντες χρηστοὶ ἦσαν.

THEOPHRASTUS X. (ed. Jebb).

Why is this a mark of *περιεργία*? What were the usual forms of epitaphs in the principal cities of Greece?

ΜΝΗΣΙΑΟΧΟΣ. ΕΤΡΙΠΙΔΗΣ. ΑΓΑΘΩΝ.

3. MNH. τί οὖν λάβω;
 ETP. ὅ τι; τὸν κροκωτὸν πρῶτον ἐνδύου λαβών.
 MNH. σύζωσον ἀνύσας. αἰρέ νυν στρόφιον. ETP. ἰδού.
 MNH. ἴθι νυν κατὰστειλὸν με τὰ περὶ τῷ σκέλει.
 ETP. κεκρυφάλου δεῖ καὶ μίτρας. ΑΓΑ. ἡδὲ μὲν οὖν
 κεφαλῇ περίθετος, ἣν ἐγὼ νύκτωρ φορῶ.
 ETP. νῆ τὸν Δί', ἀλλὰ κάπιτηδεῖα πάννυ.
 MNH. ἄρ' ἀρμόσει μοι; ETP. νῆ Δί' ἀλλ' ἀριστ' ἔχει.
 φέρ', ἐγκυκλον ποῦ; ΑΓΑ. λάμβαν' ἀπὸ τῆς κλινίδος.
 ETP. ὑποδημάτων δεῖ. ΑΓΑ. τὰμὰ ταυτὶ λάμβανε.
 MNH. ἄρ' ἀρμόσει μοι; ETP. χαλαρὰ γοῦν χαίρεις φορῶν.
 ARISTOPH. *Thesmoph.* l. 252 sqq.

Translate, explaining the terms used in the passage.

How far is the dress here described that of daily life, and in what respects is it different?

4. Write out in uncials of the place and time to which they belong the following inscriptions:—

(a) Ἰάρων ὁ Δεινομένεος καὶ τοὶ Συρακόσιοι τῷ Δι Τυρ[ρ]άν' ἀπὸ Κύμας.
 (Syracuse, B.C. 474.)

(β) Τῆς Ἡρας ἱερός εἰμι τὰς ἐν πεδίῳ· Φυνίστος με ἀνέθηκε ὄρταμος Φεργῶν
 δεκάταν. (Calabria, B.C. circ. 550.)

(γ) Ὅρος τεμένους ἐπωνύμων Ἀθήνηθεν. (Athenians at Samos, B.C. circ. 440.)

5. Briefly indicate some of the respects in which the coinage of the Greeks and Romans reflects the differences in the political habits and institutions of the two races.

6. Translate and comment on the following passage:

tessera quos habeat numeros, distante uocato
 mittere quo deceat, quo dare missa modo:
 discolor ut recto grassetur limite miles,
 cum medius gemino calculus hoste perit,
 ut, mage uelle sequi sciat et reuocare priorem,
 nec tuto fugiens incommitatus eat.
 parua sedet ternis instructa tabella lapillis,
 in qua uicisse est continuasse suos.

OVID, *Trist.* II. 475—482.

7. Describe in detail the dress of the Roman military figure of which a photograph is laid before you.

8. Carefully describe the cast laid before you and mention any other existing representations of the same subject.

9. Interpret the following inscriptions:

(a) LVN VET
 A III R
 X

(b) S V T V V V T : T I D A V
 V A V > : V A O V A A

(c) C · OPPIO · C · F · VEL | BASSO · P · C | PR · AUXIM · 7 · LEG | III · FL · FEL · EVOC ·
 AUG | AB · ACTIS · FORI · B · PR · PR | SIGNIF · OPTION · TESSE | COH · II · PR · MIL · COH ·
 XIIII | ET · XIIII · VRBANARVM | COLL · CENT · AVXIM | PATR · OB · MERITA · EIVS | L · D · D · D

10. Describe in detail the Roman coins of which casts marked A to C are set before you.

FRIDAY, June 5, 1885. 9—12.

WRITE an essay on one of the following subjects.

1. Of the two arts, sculpture and painting, the former belongs especially to the ancient, the latter to the modern world. Account for this fact, shewing alike its causes and its consequences.
2. Give some account of the successive efforts of Greek sculptors to embody the ideal of *either* Hera or Herakles; indicating the place held in the line of development by the principal extant sculptures.
3. Discuss the possibilities of education at Athens in the time of Demosthenes for the bodily mental and aesthetic faculties of young men of Ephebic age, living the life of ordinary citizens.
4. What ideas, architectural and religious, are embodied in the form and the arrangement of Greek temples? Describe in detail the parts of the temple and their uses.
5. Trace the connexion from the point of view of art between Etruria, Greece and Rome.
6. Give an account of the production and sale of books at Rome in the time of Martial.

SECTION E.

SATURDAY, June 6, 1885. 9—12.

Full credit may be obtained by answers to six questions only, of which at least three should be taken from A (including A 4) and two from B: but you are at liberty to attempt a greater number.

A.

1. It has been held that original *w* passed in Greek (1) into *v*, (2) into *o*, (3) into *ι*, (4) into *β*, (5) into *μ*, (6) into *γ*, (7) into *φ*. Give instances of such supposed changes pointing out those which seem best supported and those which are improbable. Describe briefly the physiological character of each change.

What general objection may be brought against such a history? To what extent do you hold the objection valid?

2. How are the following consonantal groups dealt with in Greek:

wr, sr, sn, both initial and medial,

sw, st, sp, kw, initial,

ky, medial?

What is the principle of assimilation? and what relation does it bear to other kinds of phonetic change?

3. (a) What is the physiological relation of the sounds denoted by E and O respectively?

(b) How do these sounds exchange in the Greek noun-suffixes and verb-suffixes?

(c) What are Curtius' arguments for the development in Greek and Latin of *e* and *o* out of *a*? What are the chief lines of argument on the other side? On the assumption that *e* and *o* were not special Greek developments, determine the relation in which *a*-forms, e.g. in verb bases, aorist or present, stand to *e*-forms.

(d) What is the physiological relation of the sounds denoted by *e*, *ei*, *η*? and of those denoted by *o*, *ou*, *ω*? What is the historical development of each set? (In answering this question, take into especial account the phenomena of "compensation" in (1) Lesbian, (2) Attic, (3) Doric, (4) Ionic.)

4. (a) Note the phonetic changes which are assumed in the identification of the root of each of the following pairs of words: and give (1) cognate words from any other language to support your argument, (2) a few examples of similar change: (1) βίος—uiuos. (2) ἔπομαι—sequor. (3) νίφει—ninguit. (4) τέσσαρες—quattuor. (5) θέρος—formus. (6) ἄφενος—opes.

(b) Analyse the following words, pointing out in each case the base, the inflexional suffix, and any phonetic variation which calls for notice:

ἀνδάνω—ποιμαίνω—εἰρύεται—ἔστωσαν—ὄπιδα—ἀνδρός—τουτεῖ—σαφῶς.

5. What are the four special characteristics of the perfect stem as shewn in Greek? Support your answer by briefly indicating their appearance in other Indo-European languages. Note how far any of these are found in other tense-stems. Draw some inference as to the primary use of the perfect.

What new, specially Greek, formations of the perfect, active and middle, can be found in the language? Sketch their development from the Epic period onward.

6. Translate the following extracts, excepting (b), and remark upon anything noteworthy in the forms including those of (b), especially when these help to distinguish the dialect to which the inscriptions severally belong:

(a) ὅτι δέ κα μὴ πράξει ὁ ἀνέλόμενος κατὰ τὴν συνθήκαν ἢ μὴ ἐν τοῖς χρόνοις τοῖς γεγραμμένοις, ὑπόλογος ἔσσηται τοῖς πολιανόμοις καὶ τοῖς σιταγέρταις τοῖς ἐπὶ τῷ Φέτεος, καθὼς καὶ ἐν τῇ ἄλλῃ συνθήκῃ γέγραπται. αἱ δέ κα τοὶ πολιανόμοι τοὶ αἰεὶ ἐπὶ τῶν Φετέων ἔντες μὴ πράξωντι πάντα κατὰ τὴν συνθήκαν, αὐτοὶ ὑπόλογοι ἔσσονται κατὰ τὴν συνθήκαν.

(b) ἔδοξεν Φαξίων τοῖς κόσμοις καὶ τῇ πόλει ψαφιζαμένοις κατὰ τὸν νόμον· ἐπεὶ δὴ Τηίοι διὰ προγόνων φίλοι καὶ συγγενεῖς ὑπαρχόντες τὰς ἀμᾶς πόλεος ἀπεστεύσαν ψάφισμα καὶ πρειγυντάς, Ἀπολλόδοτον καὶ Κωλώταν, οἱ καὶ ἐπελθόντες ἐπὶ τὴν ἐκκλησίαν καὶ τὸ ψάφισμα ἀποδόντες διελέγον περὶ πάντας σπουδὰς καὶ φιλοτιμίας περὶ τῷ γενέσθαι τὴν καθιέρωσιν τῷ Διονύσῳ τὰς τε πόλεος αὐτῶν καὶ τὰς χώρας καὶ τὴν ἀσυλίαν, τὰ τε ἄλλα τὰ ὑπαρχόντα αὐτοῖς ἔνδοξα καὶ τίμια διαφυλάδδεν καὶ συνεπαύξεν ἐς τὸν αἰεὶ χρόνον, περὶ δὲ τῶν αὐτῶν διαλεγέντος καὶ Περδίκκα τῷ παρὰ τῷ βασιλέως Φιλίππου πρειγυντᾷ· δεδόχθαι Φαξίων τοῖς κόσμοις καὶ τῇ πόλει, ἐπαινέσαι μὲν τὸν πρειγυντάν, διότι καλῶς καὶ συμφερίντως διελέγον περὶ τὰς οἰκειότατος τὰς ὑπαρχόντας αὐτοῖς πορτ' ἀμέ. . . .

(c) τὸν ξένον μὲν ἄγεν ἐ τῆς Χαλεΐδος τὸν Οἰανθία μεδὲ τὸν Χαλειέα ἐ τῆς Οἰανθίδος, μεδὲ χρέματα αἱ τι(ς) συλῶ· τὸν δὲ συλῶντα ἀνὰ τὰ συλῆν τὰ ξενικά ἐ θαλάσσας ἄγεν ἄσυλον, πλὴν ἐ λιμένος τῷ κατὰ πόλιν. αἱ κε ἀδίκος(ς) συλῶ, τέτορες δραχμαί· αἱ δὲ πλέον δέκ' ἀμαρᾶν ἔχοι τὸ σῦλον, ἐμιόλιον ὀφλέτο φότι συλάσαι.

(d) Αλεξικράτιος ἄρχω μεινὸς Δαματρίῳ πεντεκαιδεκάτῃ Μικόλος Ἀριστογίτονος ἀντίθειτι τὰν Φιδίαν θρεπτὰν Εὐφροσύναν ἰαρὰν τει Σαράπι τὰν ἀνάθεσιν ποιόμενος διὰ τῷ συνεδρίῳ κατ' τὸν νόμον.

(e) | Αὐτονοεῖς | ὀνέθεικε... | τὸν Ποτειδοῦνι πὲρ τοῖ παιδὸς Αὐτονόοι.

(f) δέδοσθαι αὐτῷ ἀτέλειαν πάντων τῶν πάντα χρόνον καὶ αὐτῷ καὶ ἐκγόνοισι· στᾶσαι δὲ αὐτῷ καὶ εἰκόνα χαλκίαν...καλῆσθαι δὲ καὶ εἰς προεδρίαν· στεφανώτω δὲ αὐτὸν ὁ χοροστάτας αἱ ὁ ἐνέων ἐν τῷ ἄγωνι καὶ ὀγκαρυσσέτω ἀνδραγαθίας ἕνεκα... ἵνα γυγνώσκῃσι πάντες ὅτι ὁ δᾶμος ὁ Νασιώταν τοῖς ἀγάθοις ἀνδρας καὶ εὐεργέταις τίμαι.

(g) Πύθων (')Ερμῇ ἄγαλμα (')Ερμοστράτο Ἀβδηρίτης
ἔστησεμ πολλὰς θησάμενος πόληας.

Emend anything in (c) or (e) which you think fit.

B.

1. How far does the use of the prepositions ἀμφὶ περὶ διὰ ὑπὲρ change in passing from Epic to Attic Greek? Can the words πρόσθε εἴσω ὥς be considered prepositions? Explain the case-usages connected with them.

Discuss the use of δὲ in *apodosi*, and of τε in connexion with relatives and conjunctions formed from relative stems.

2. What is the history of the Greek infinitive forms, (1) in -μεναι, -μεν, -μειν, (2) in -εν, -ην, -ειν, (3) in -ναι? Give examples to shew the primary force of the infinitive (with any parallels from any other language). What causes led to the development in it of the verb force? What later development had it in Greece which is almost unparalleled in the history of ancient languages?

Discuss (1) the exclamatory, (2) the imperative, (3) the optative use of the infinitive, (4) the use with ὥς and ὥστε. Which of these are Epic and which are Attic usages?

3. Discuss grammatically words spaced in the following sentences, defining the period of the language, if any, to which the usage is restricted, and illustrating from the Greek and Latin.

- | | | |
|-----|---------------------------------------|----------------------------|
| (a) | ὑπὸ τοιούτων ἀνδρῶν θορυβεῖ. | SOPH. <i>Aj.</i> 164. |
| (b) | μάτην ἐμοὶ κεκλαύσεται. | AR. <i>Nub.</i> 1436. |
| (c) | τοῦ δὲ σοῦ ψόφου οὐκ ἂν στραφείην. | SOPH. <i>Aj.</i> 1117. |
| (d) | θεόφιν μῆστωρ ἀτάλαντος. | HOM. <i>Il.</i> xvii. 477. |
| (e) | οὐδ' ἀφάμαρτε τιτυσκόμενος κεφαλῇφιν. | HOM. <i>Il.</i> xi. 350. |

- (f) καὶ τότε δὴ περὶ κηρὶ Ποσειδάων ἐχολώθη
νῆωνοιο πεσόντος ἐν αἰνῇ δηϊότητι. HOM. *Il.* iv. 207.
- (g) Διόθεν βλαφθέντα βέλεμνα. HOM. *Il.* xv. 489.
- (h) ἀλλ' αὐτὰ ταῦτα καὶ νῦν ἤκω παρὰ σέ. PLAT. *Prot.* 310 E.
- (i) ἐλκέμεναι νειοῖο βαθείης πηκτὸν ἄροτρον. HOM. *Il.* x. 353.
- (j) ὁ δ' αὖτ' ἔπescen, μελίη ὥς
ἦ τ' ὄρεος κορυφῇ.....
χάλκῳ ταμνομένη τέρενα χθονὶ φύλλα πελάσση.
HOM. *Il.* xiii. 179.
- (k) εἰς ἀθυμίαν ἀφίκεσθ' ἥνικ' εἰσεπεμπόμην;
πῶς γὰρ οὐ; τίς μοι φύλαξ ἦν, εἰ σὺ συμφορᾶς τύχοις;
EUR. *Bacch.* 612.

4. (a) Trace the force of the middle voice in the words οἰμῶξομαι—σκέπτομαι—
κυνήσομαι—πλεύσομαι—θύσασθαι.

(b) 'Οσμὴ χρὴ λέγειν διὰ τοῦ σ· διὰ γὰρ τοῦ δ ὁδμ', 'Ιώνων· παρανομεῖ
γούν Ξενοφῶν εἰς τὴν πάτριον διάλεκτον ὁδμὴ λέγων. PHRYNICHUS lxxi.

Give other instances in which Xenophon (or Aristotle) deviates from pure Attic
usage.

5. What is meant by Itacism as a source of error in Greek manuscripts?
To what peculiarity in the later history of the Greek language is this confusion
due? Give examples of the confusion of ε and αι, ι and ει.

Comment upon the following passages, and criticize any emendations which have
been suggested in them:

- (a) πᾶς ἀπαλλάξω βιοτὰν ἐμὰν τοῦδ' ἀναλήτου¹ πάθους.
EUR. *Hipp.* 1386.
- (b) ἐδοξάτην μοι τὰ² δὴ ἠπείρω μολεῖν. SOPH. *Frag.* (Dind. 761).
- (c) οὐκ ἔστιν³ ὅτφ μείζονα μοῖραν
νείμαιμ' ἢ σοι. AESCH. *Prom.* 291.
- (d) αἶον⁴ δὲ πένθος τῆς θαλασσίας θεοῦ | οἶσω. EUR. *Rhes.* 975.
- (e) ξυνὸς Ἐνυάλιος καὶ τὸν κτανέοντα⁵ κατέκτα. HOM. *Σ.* 309.
- (f) ἐκεῖνοι οἱ λίθοι εἰσὶ καθαροὶ καὶ οὐ κατεδηδεσμένοι οὐδὲ διεφθαρμένοι
ὥσπερ οἱ ἐνθάδε ὑπὸ σηπεδόνοσ καὶ ἄλμης⁶ ὑπὸ τῶν δεῦρο ξυνερρηκόντων.
PLAT. *Phaed.* 110 E.
- (g) δυνάμει γὰρ ταῦτα μέγιστα διεφάνη⁷. THUC. i. 18.

¹ ἀναλητὸν Madv.

² τῷ Cobet.

³ ἔστ' ἂν Madv.

⁴ βαῖον most edd., ῥῶν Cobet.

⁵ κτανέοντα Cobet.

⁶ Cobet omits ὑπὸ . . . ἄλμης.

⁷ δὴ ἐφάνη Stephanus.

SATURDAY, June 6, 1885. 1½—4½.

1. TRANSLATE, with marginal notes where necessary :

- (a) evam anyac ca vaktavyam, kripam kuryād yathā mayi
(vāyunā dhūyamāno hi vanam dahati pāvakaḥ)
“bhartavyā rakshaṇīyā ca patnī hi patinā sadā.
tan naṣṭam ubhayam kasmād dharmajñasya satas tava?
khyātaḥ prājñaḥ kulinaḥ ca sānukroḇo bhavān sadā:
samvritto niranukroḇaḥ, caṇke, madbhāgyasaṅkshayāt.
tat kurushva, naravyāghra, dayām mayi, nareḇvara,
āṇiḇaṁsyam paro dharmaḥ, tvatta eva mayā ḇrutāḥ.”

Nala, xvii 40—43.

- (b) “so 'yam nripatir āyāta” ity eva samacintayat.
“atha vā yām Nalo veda vidyām, tām eva Vahukaḥ;
tulyam hi lakshaye jñānam Vāhukaśya Nalasya ca;
api c'edaṁ vayas tulyam Vāhukaśya Nalasya ca.
n'āyam Nalo mahāvīryas, tadvidyaḇ ca bhaviṣyati.
pracchannā hi mahātmānaḇ caranti prithivīm imām;
daivena vidhinā yuktāḥ, pracchannāḇ c'āpi rūpataḥ.
bhavet tu matibhedo me gātravairūpyatām prati;
'pramānāt parihīnas tu bhaved' iti matir mama.
vayaḥ pramānam tat tulyam, rūpeṇa tu viparyayaḥ:
Nalam sarvagunair yuktam manye Vāhukam antataḥ.”

Nala, xix 29—34.

2. Translate, commenting upon the forms of spaced words, giving the corresponding forms of classical Sanskrit, and explaining the nature of the change that takes place :

- (a) vī pathō vajasātaye cinuhī vī mṛidho jahi sādhanām ugra no dhīyaḥ.
pāri tṛṇdhi paṇinām ārayā hṛīdayā kave āthem asmābhyam randhaya.
vī pūshann ārayā tuda paṇēr icha hṛīdī priyām āthem asmābhyam randhaya.
R. V. vi 53, 4—6.
- (b) krātvaḥ samaha dīnātā pratīpam jagamā ḇuce mṛilā sukshatra mṛilāya.
apām mādhye tasthivāṇsam tṛishṇāvidaj jaritāram mṛilā sukshatra mṛilāya.
yāt kim cedam varuṇa daīvye jāne 'bhidrohām manushyaḇ cārāmasi
ācittī yāt tāva dhārmā yuyopimā mā nas tasmād énaso deva ririshaḥ.
ib. vii 89, 3—5.
- (c) ābodhy agnīḥ samīdhā jñānām prāti dhenūm ivāyatīm ushāsam
yahvā iva prā vayām ujjiḥānāḥ pra bhānāvaḥ sisrate nākam ācha.
ābodhi hōtā yajāthāya devān ūrdhvō agnīḥ sumānāḥ prātār asthāt
sāmiddhasya rūcad adarḇi pājo mahān devās tāmāso nīr amoci.
yād im gaṇāsya raḇanām ājigaḥ ḇūcīr aṇkte ḇūcibhir gōbbhir agnīḥ
ād dākshīṇā yujyate vājayānty uttānām ūrdhvō adhayaj juhūbbhiḥ.
agnīm āchā devayatām mānāṇsi cākṣhūṇshīva sūrye sam caranti
yād im sūvāte ushāsā vīrūpe ḇvetō vājī jāyate āgre āhnām.
jānishṭa hī jēnyo āgre āhnām hitō hitēshv arushō vāneshu
dāme-dame saptā rātnā dādāhāno 'gnīr hōtā nī shasādā yājīyān.

ib. v 1, 1—5.

3. Analyse havyavāhana—kāmavāsiṇī—rājāpasada—mithyāvacana—yatrasāyampratiḇraya—tejobalasamāyukta.

4. Comment upon the forms

geha—paraspara—khecara—āḇcarya.

5. Parse *dāçvānsam—sacāvahai—cakṛiṣhe—agrabhīṣhma—acacakṣham—icchetthāḥ—brūyāsta—krīthāḥ—soḍhum—digdha*.

6. Decline in the singular *sakhi, jā, pad*: and in the singular and plural *ūti* and *kratu* according to Vedic use, distinguishing the forms in which *y v* are shewn by the metre to be vocalic.

7. Give the present imperative of *dhā, han, kṛi*: distinguishing any Vedic forms.

8. Give and illustrate the rule for the conversion of *n* to *ṇ*: and explain the Sanddhi combinations *ahan savitar—yāñ ṛiṇaṇcaye*.

9. Explain the titles *vimuco napāt—vasur jārāḥ—nṛitamasya nṛiṇām—svar janantī—mārjālyāḥ*.

10. Give Greek, Latin, or other cognates of any four of the following words, explaining the changes they have undergone in form or meaning:

sahasra—vājin—astam—nar—pūrva—sarva.

11. Comment upon the case-usages in the following passages:

savitus taṁ samādadhat—doshena pariçaṇkituṁ—açvāḥ varjitāl lakṣhaṇair hīnaiḥ—atha dīrghasya kālasya abravīt—pravṛje ya āsīt—tasthuḥ savāya te—indrād abhayanta—antād divaḥ papratha ā pṛithivyāḥ—ushasām iṣhaṇyan.

12. Contrast briefly the Sanskrit with the Greek system of accentuation.

MONDAY, June 8, 1885. 9—12.

[Full credit may be obtained by answers to six questions, of which No. 7 should be one, and at least two others should be from A, and two from B: but you are not required to limit yourself to six questions, nor to attempt No. 7.]

A.

1. (a) What various sounds were ascribed by Pliny to the letter L in Latin? What evidence does the history of the language give in support of such distinctions or otherwise? What is meant by Lambdacismus?

(b) Explain physiologically the connexion of L with U, and of R with E in Latin.

(c) Describe any attempts that were made by the ancients to introduce a more exact representation of the vowels in writing. Were the proposed distinctions in any case of etymological importance?

2. (i) "Accentus est velut anima vocis." DIOMEDES.

Is this specially true of Latin? Give (if possible in Latin) the rules of accentuation in the imperial epoch. What reasons are there for supposing a different system to have prevailed in earlier times?

(ii) Discuss the scansion of any eight of the following verses, pointing out the bearing of your results upon the history of particular words or forms:

- (a) mea puera quid verbi ex tuo ore supra fugit? LIV. ANDR. *Od.* i. 64.
 (b) quia Soeledrus dormit, hunc subcustodem suum
 foras ablegavit, dum ab se huc transiret. placet.
 set Periplomenus quam ei mandavi mulierem
 nimis lepida forma ducit. di hercle hanc rem adiuvant. PL. *Mil. Gl.* 871.
 (c) desiste. nempe ea causa, ut ne id fiat palam.
 ita me di amabunt, hau propterea te rogo
 ut hoc proferam, sed ut tacita mecum gaudeam. TER. *Hec.* 107.
 (d) magister mihi exercitor animus nunc est.
 set hoc non liquet nec satis cogitatumst
 utrum potius harum mihi artem expetessam
 amorin' me an rei obsequi potius par sit. PL. *Trin.* 230.
 (e) viresque valentes
 contudit crudelis hiemps. ENN. *Ann.*
 (f) viden' ut geminae stant vertice cristae. VERG. *Aen.* vi. 779.
 (g) pulcrum quod vides esse nostrum regem
 pulcrum quod putas esse vestrum regem
 si verum putas esse, non irascor. ALEX. *Sev.*

3. It is held that there has been both in Greek and Latin an interaction between the perfect and the *s*-aorist, chiefly on the inflexional, and to some extent on the formative suffixes. Examine this view in detail, so as to shew whether it suits the facts of the two languages. Assuming it to be true for Latin, discuss the formation of the cognate tenses.

4. (1) What parts of noun-forms are in Latin specially liable to vowel-loss or degradation? (2) Give sufficient examples of such degradation according to the two main lines of descent. What vowel changes take place in Latin from one line to the other? (3) What evidence is there for the existence of a sound in Latin approaching the German *u*? (4) Explain (a) the insertion, (b) the representation of vowels in words borrowed by the Latin from the Greek.

5. (1) Translate into classical Latin, with notes on the etymology or form of the words in Italics:

- (a) quaquā intuitus erat oculi, a tuendo primum *templum* dictum. In arce sic:
 'templa tescaque me ita sunt, quoad ego *caste* lingua nuncupavero.
 'olla *veter arbor*, quirquir est, quam me sentio dixisse, templum tescum-
 que finito in sinistrum.' VARRO, *L. L.* vii. 7.

- (b) si qui hominem liberum dolo sciens morti *duit*, *paricidas* esto. XII. TAB.

(2) In the following extracts from inscriptions give (a) a literal Latin translation, supplying in brackets the words necessary to complete the sense, (b) the internal evidence defining the date, (c) notes on any forms which illustrate the history of the ancient Italian or the Romance languages.

- (a) C · FLACENTIOS · HER · F · MARTE · SACROM ·
 C · FLACENTIVS · HER · F · MARTE · DONV · DEDE ·
 (b) DEVAS · CORNISCAS · SACRVM ·
 (c) COPIAS · CARTACINIENSIS · PRAESENTED · *hanibaled* ·
 DICTATORE · OLORVM · INALTOD · MARID · PVCNANDOD · *vicet* ·
uIQVE · NAVEIS · *cepET* ·
 aurom · CAPTOM · NVMEI · ○○○ DCC ·
 arcentom · CAPTOM · PRAEDA · NVMEI · ○ ○

(d) MISSÓ · AD · IVVENTVTEM · PER · ITALIAM · LEGENDAM · LÉG · AVGG ·

(e) NERONÍ · CLAVDIO · AVG · F · CAISARÍ · DRVSO · GERMANICO · PONTIF ·
AVGVRI · XV · AÍR · S · f · VII · AÍR · EPVLON · COS · des ·
PRINCIPI · IVJENTVTIS ·

6. Interpret and comment upon:

(a) SVAE · PIS · PRVMEDDIXVD · ALTREI · CASTROVS · AVTI · EITVAS ·
ZICOLOM · DICVST · IZIC · COMONONI · HIPID · NE · PON · QP · TOVTAD ·
PETIRVPERT · VRVST · SIPVS · PERVM · DOLOM ·
MALLOM · IN · TRVTVM · ZICO · TOVTO · PEREMVST · PETIROPERT · NEIP · MAIS ·
POMTIS ·

(b) FISOVIESAN`SIE · SALVOSERITV · OCREM · FISI · TOTAM · IOVINAM ·
FISOVIESAN`SIE · SALVOSERITV · OCRER · FISI · ER · TOTAR · IOVINAR ·
NOME · NERF · ARSMO · VIRO · PEQVO · CASTRVO · FRIF ·
SALVA · SERITV · FVTV · FONS · PACER · PASE · TVA · OCREFISI ·
TOTE · IOVINE · ERER · NOMNE · ERAR · NOMNE ·

(c) et ape frater çersnatur furent, ehvelklu feia fratreks ute kvestur sve
rehte kuratu si: sve mestru karu fratri Atijediu pure ulu benurent prusikurent
rehte kuratu eru, edek prufe si.

Give a scheme of the *a*-declension in Oscan or Umbrian.

7. Analyze not more than one of each of the following groups of words,
(1) distinguishing carefully the formal and inflexional elements, (2) pointing out
the function of each, and its analogue in Greek, (3) giving words in other
languages derived from the same or cognate root:

polluceto, prohibessis—anticus, toppe, interdius—dumtaxat, reddibo, danunt—
iam, quia—strepiti, partus (from pars)—adagiis, stolidis, argutis—velle, furere—pristi—
nus, dextimus—viginti, quartae (nom. pl.)—amfractus, popina, praedium, haedus—
repente, secius—defrutum, tuceta, glaucomam.

8. Interpret and assign, where necessary, to their local origin, *either*

(a) the following names of deities: Acca Larentia—Lumphae—Vacuna—Cerus
Manus—Vesuna—Vediovis—Dius Fidius—Vervactor—Hercoles—Panda—Lucetius—
Libitina,

or (b) the following names of persons and places: Esquilina, Clitumnus, Italia,
Formiae, Reate, Nuceria: Gnaius, Accius (Attius), Oscan, Fronto, Brennus, Vespasianus.

B.

9. "Quam quidem ad rem nos, ut videmur, magnum attulimus adiumentum
hominibus nostris, ut non modo Graecarum litterarum rudes, sed etiam docti aliquan-
tum se arbitrentur adeptos et ad dicendum et ad iudicandum." CIC. *de Off.* i. 1.

How far does the artificial character of the refinement and enlargement of the
Latin language by the Scipionic circle, Cicero, etc., deprive classical Latin of the
character of a living language? Give in detail (a) points of pronunciation in which
classical Latin differs from both archaic and late Latin, (b) points of syntax in
which the pure Latin usage is modified by imitation of the Greek.

To what extent are the rules of *oratio obliqua* known to the writers of the
earlier popular comedies?

10. (1) Translate exactly, illustrating from the Greek, where possible :

- (a) *triduum* aut *quatrimum* post. CATO.
- (b) ea res *nihil* pertinet ad religionem. LIVY, ii. 36.
- (c) multum illi *terra*, plurimum *mari* pollent. LIVY, i. 23.
- (d) *quintum decimum* Kal. Novembres. TAC. *Ann.* vi. 25.
- (e) *Corinthe*, Achaiae *urbe*. TAC. *Hist.* ii. 1.
- (f) *eaque tota nocte* continenter ierunt. CAES. *B. G.* i. 26.

Point out in each case the period, if any, of the history of the Latin language to which the usage in question is limited.

(2) Discuss generally the usages in Latin of words denoting space or time, in which the Locative (or its representative) and the Accusative appear to express the same relation.

(3) To what extent can the Locative in Latin or any other Indo-European language be used to express the *goal* of motion? What bearing has any such use on the question of the original meaning of the case?

11. Write grammatical notes on the words underlined in the following passages :

- (a) quoniam me ut id mihi habeam *curare* rogas, experiar.
CATO, *de Re Rust.* i. 1. 2.
- (b) ubei de plano recte legi *possitur*. *Lex Acilia*.
- (c) suo *sibi* argumento confutatus est. GELLIUS, v. 10. 16.
- (d) non potes *probasse* nugas. PLAUT. *Aul.* v. 1. 18.
- (e) nil ego *contulerim* iucundo sanus amico. HOR. *Sat.* i. 5. 44.
- (f) sed tamen ait in senatu se adesse uelle, si Caesar *adductus sit*, ut praesidia deducatur. CIC. *Att.* vii. 15. 2.
- (g) adeoque infestis animis concurrerunt, ut moribundi ex equis *lapsi sint*.
LIV. ii. 6.
- (h) cum moenibus bellum propulsare *posset*, in aciem copias eduxit. LIV. i. 2.
- (i) eo paulatim progressus est, ut quoties apud Othonem *epularetur*, cohorti... nummos divideret. TAC. *Hist.* i. 24.
- (k) scit enim *quia* mortis *est* fabricatrix voluntas. LACT. vi. 22. 3.

12. Discuss the emendations that have been proposed by Madvig in the following passages :

- (a) venena magnum fas nefasque non valent
convertere humanam vicem :
diris agam vos : dira detestatio
nulla expiatur victima.
HOR. *Epod.* v. 87—90.
- (b) atque etiam nomina necessitudinum, non solum naturae nomen et iura mutavit, uxor generi, noverca filii, filiae pellex.
CIC. *pro Cluent.* 199.
- (c) an iustitia augurii et decurias equitum egregium iudicandi munus expleturos, si fractos sonos et dulcedinem vocum perite audissent? TAC. *Ann.* xiv. 20.
- (d) quam multa animalia hoc primum cognovimus seculo! quam multa negotia ne hoc quidem seculo! multa venientis aevi populus ignota nobis sciet.
SEN. *Quaest. Nat.* vii. 30. 5.

Illustrate your answer in each case by examples of similar errors occurring elsewhere.

MONDAY, June 8, 1885. 1½—4½.

[Full credit may be obtained by sufficient answers to six questions, of which it is suggested that two at least should be taken from A, two from B, and one from C: but you are at liberty to attempt a greater number.]

A

1. CURTIUS explains, e.g. *bhārāmi*, *fero*, *φέρω* as coming from original Indo-European *bharami*. G. Meyer following Brugmann deduces them from original *bharā*. Similarly for the second person, Meyer holds that the Homeric *ἔσσι* does not represent directly an original *as-si*, but is a later, special Greek, form.

Point out clearly the divergence in method, which leads to these different results. To what does the difference in principle actually amount?

2. Give with a few illustrations the facts of the German "Lautverschiebung." What apparent exceptions to this law have been noted, and what real ones? Shew at length how the latter have been explained. Remark upon each point of correspondence between these words—*κλυτός*(s)—*ment*(is)—*centum*—*πατήρ*—and their respective English equivalents.

3. Explain physiologically the character (a) of vocalized or sonant nasals, (b) of nasalized vowels. Give examples of the occurrence of either in Sanskrit, Zend, Greek or Latin. Describe the reasons for which the existence of the former at some epoch is postulated to account (1) for lengthenings of vowels otherwise unexplained, (2) for the forms of the accusative plural.

4. What is meant by the term *Svarabhakti*? Discuss its importance in connexion with the history of the following or other forms:

Sanskrit: *tarasanti*, *giri*, *dīrgha*, *pūrva*, *sthātur* (neut. nom. sing.).

Zend: *merethyāus*, *kehrpēm*, *haurvātā*, *iradhatē*, *dātare*.

Greek: *ἡρέμα*, *ἀλεγεινός*, *Τριτογένεια*, *ρύομαι*.

Italian: *fecerunt*, *rītus*, *prōvincia*; *aragetud*, *tristaamentud*.

Bulgarian: *mlěko* (milk), *slěmę* (beam), *prě* (*περί*), *zlato* (gold).

Old English: *mearg* (marrow), *beorht* (bright), *meoluc* and *meolc* (milk), *byrig*.

5. Discuss the position of Celtic in the Indo-European family. What are the chief existing monuments of old Celtic (Gaelic and Cymric)? Compare the treatment of Latin words in any modern Celtic language with the changes that have taken place in any Romance language.

6. What was the meaning of the controversy whether the order of the cases was 'natural' or 'fortuitous'?

Give the arguments of any of the Roman grammarians on this point. What hints does the comparative method give for an order of the cases? What bearing has the history of accentuation on this point? Account for the declension of nouns in certain languages with strong and weak stems, and shew traces of this system in Greek.

7. What is Comparative Syntax? What are the assumptions on which it rests and what is their validity? Assuming the existence of such a section of Comparative Philology, what do you consider is its value for the syntax of special languages? Give full illustrations, especially from Greek and Latin. What cautions are specially needed?

B

1. (a) What are the forms of the conjunctive and the optative which survive in any Indo-European language? To what extent do the presumed original forms lend themselves to Delbrück's theory of the original force of each mood?

(b) What is the history of the terms "mood," "conjunctive," "subjunctive," "optative"? What inference do you draw from the fact that Indian grammar has no term for "mood"?

2. Trace the history of the pronouns TA, YA, SWA, clearly marking the stage at which they coincide in use. What is the importance of the history for the development of mood usage? Can it be proved that every relative pronoun was originally deictic? What may have been the history of the relative pronoun in Latin? Trace the usage of the Latin relative-base so far as is possible in other languages.

3. (a) By what stages are dependent clauses generally developed out of independent? On what grounds do you assume the priority of the independent use of the moods?

(b) Discuss the origin and use of the particles mā, μή, ei, si, ced, ned, quin, kam, kām, kev, dv, so far as they throw light on the development of mood usage.

4. Point out the light which passages like the following throw on the origin and development of mood construction, giving any analogous uses from other languages which any of these may suggest.

- | | | |
|-----|--|----------------------------|
| (a) | çāçvat purōshā vy ūvāsa devy, átho adyédām vy āvo maghónī,
átho vy ūchād úttaráñ ānu dyun. | <i>R. V.</i> 1. 113. 13. |
| (b) | kim nu syād Mātaliṛ ayam devarājasya śārathiḥ?
utāho svid bhaved rājā Nalaḥ? | <i>Nala</i> 19. 27. |
| (c) | mayā te 'ntarhitam rūpam, na tvām vidyur janā iti. | <i>Nala</i> 14. 14. |
| (d) | samayenotsahe vastum tvayi, viraprajāyini,
ucchiṣṭam naiva bhunjiyām, na kuryām pādadhāvanam. | <i>Nala</i> 13. 67. |
| (e) | ne pigeat fecisse: ut potius pigeat, si non feceris. | <i>PLAUTUS, Trin.</i> 348. |

(f)	bránāma yāni no jūjoshah.	R. V. 5. 30. 3.
(g)	Ζεὺς αὐτὸς νέμει ὄλβον ὅπως ἐθέλησιν ἐκάστω.	ζ. 189.
(h)	ἄξω τῇλ' Ἰθάκης ἵνα μοι βίοτον πολὺν ἄλφοι.	ρ. 249.
(i)	αἰθ' ὄφελος σὺ μὲν αὖθι μετ' ἀθανάτης ἀλήσει ναλεῖν, Πηλεὺς δὲ θνητὴν ἀγαγέσθαι ἀκοιτιν.	Σ. 86.
(j)	αἱ γὰρ τοῦτο, ξεῖνε, ἔπος τελέσειε Κρονίων, γνοίης χ' οἷη ἐμὴ δύναμις καὶ χεῖρες ἔπονται.	υ. 235.
(k)	σπεύσομεν, εἴ κε νέκυν περ Ἀχίλληϊ προφέρωμεν.	Ρ. 120.
(l)	ταρβήσας δ' ἐτέρωσε βάλ' ὄμματα, μὴ θεὸς εἴη.	π. 179.
(m)	φοβούμεθα μὴ ἀμφοτέρων ἡμαρτήκαμεν.	THUCYDIDES 3. 53.

C

1. (a) Give with some detail the nature (1) of the proof of the derivation of the Phoenician alphabet from an Egyptian source, (2) of the chief arguments against such derivation. Shew that the chief difficulties stand equally in the way of any identification.

(b) Describe the Cypriote syllabary. Is there any evidence for its origin?

(c) What do you know of the inscriptions (1) of Abu Simbel, (2) concerning Lygdamis and the people of Halicarnassus? What points in the history of the Greek alphabet do these mark?

2. (a) What is Kirchhoff's division of the different types of the Greek alphabet? What place in this arrangement is held by (1) the Attic before B.C. 403, (2) the Attic after B.C. 403, (3) the alphabet of Melos, (4) that of Boeotia? Mention any other division which may seem to you better, with your reasons for thinking so.

(b) Write in the oldest Corinthian characters the inscription—Λόφίος μ' ἀνέθηκε.

(c) Write in old Attic the following (restored) inscription:

σῆμα φίλου παιδὸς τόδε Δημαγόρας ἀνέθηκε.

(d) How far does it appear that the forms of any late characters in any Greek alphabet are due to differentiation of existing characters?

3. (a) What evidence have we as to the earliest form of the Latin alphabet? Write out the probable form of the Greek alphabet from which it was derived.

(b) Give the symbols (so far as they exist) which represent the English sounds *g*, *d*, *m*, *r*, *w* and the Greek *φ* (α) on the Bomarzo vase, (β) in Umbrian, (γ) in Oscan. In each case state how the symbol has reached the shape given, or explain the absence of a symbol. Deduce the probable forms of these letters in the earliest Italian alphabet, and point out which of them lead to its identification with the Greek alphabet of Caere. (c) What are the essential differences of the alphabets thus arrived at, and what conclusions can be drawn as to their date or the district in which they were prevalent?

FINAL EXAMINATION FOR THE DEGREE OF DOCTOR OF MUSIC.

THURSDAY, *March 12*, 1885. 2 to 5.

COUNTERPOINT.

1. WRITE a fugue for treble, alto and bass voices on the following subject. The fugue must comprise entries of the subject in F sharp minor and G, must have a stretto, and must extend to at least thirty bars.



2. Continue this Canon, 4 in 1, by Inversion, for from 12 to 16 bars; the end may be free.



3. Write counterpoint of the fifth species for two altos, two tenors and two basses, below the following subject. The parts to enter successively in pairs, two on the second crotchet, two on the fourth, and two on the fourth crotchet of the second bar.



4. Write double counterpoint in the 10th to the following strain. Place the given part upon the middle staff of three, with the counterpoint and its inversion respectively on the staff below and the staff above it. Figure the bass in each instance. The last note to be free.



5. Write answers to each of the following subjects. Say whether the subjects are Authentic or Plagal. Give the inversion of each subject. Shew how closely each subject will "stretto."



6. Write the subjects to precede the following fugue answers, the counter-subject of the second to be inverted with the subject. State whether the subjects you write are Authentic or Plagal.



FRIDAY, March 13, 1885. 9 to 12.

HARMONY AND INSTRUMENTATION.

1. WRITE parts, according to the figuring, for two clarionets and two bassoons, above the following. Prefix the Italian names of the instruments.

Violoncello e
Contrabasso.

Figured bass notation below the staves:

Staff 1: 9 7 3, 7 6, 6 4, 6 3, 6, 6 6

Staff 2: 6 4, 6 4, 6 4, 6 5, 6 4, 6 6, 6 6

Staff 3: 9 3, 9 7 6 3, 6 5 3 7

2. Continue for the Pianoforte the following, so as to produce an epitome of the first movement of a sonata. The First Part must not exceed 20 bars, and must end in the key of E flat. The Second Part must have some passages without harmony, must pass through the keys of C minor, F minor and D flat before returning to the first phrase in the primary key, and must end with the closing phrase of the First Part, transposed into A flat.

Moderato

Figured bass notation below the staves:

Staff 1: 9 7 3, 9 7 6 3, 6 5 3 7

Staff 2: 6 4, 6 4, 6 4, 6 5, 6 4, 6 6, 6 6

4. Score the following for full orchestra without trombones, but using any of the other instruments. Prefix the Italian names of the instruments.

5. Give some account of the different theories in existence concerning the derivation and treatment of Chords of the 9th, of the 11th, and of the 13th; and state your reasons for adopting any one of those theories in preference to another.

6. At what period was it customary to place the principal melody of a Psalm Tune in the Tenor part? Name any collection of Tunes in which it is so placed, and say when the custom ceased.

PRELIMINARY EXAMINATION FOR THE DEGREE OF
BACHELOR OF MUSIC AND SPECIAL EXAMINATION
IN MUSIC FOR THE B.A. DEGREE.

THURSDAY, *June 4*, 1885. 9—12.

ACOUSTICS.

1. DEFINE wave motion. What are the elements which determine a wave? If the velocity of a wave be constant how does the length depend upon the time of vibration of its component particles?

In the case of wave motion caused by particles vibrating at right angles to a straight line; if the time of vibration be doubled, the velocity of the wave remaining the same, draw the altered wave. If the time of vibration remain the same but the velocity of each particle be doubled, draw the wave.

2. What is the nature of a sonorous wave? Upon what does the velocity of sound depend? State Mariotte's law. Why does the velocity of sound in air of different densities remain the same if the temperature be unaltered?

3. Explain the action by which a tuning fork at rest is set in vibration by the excitement of another which is accurately in unison with it.

4. Which overtones of a fundamental tone correspond accurately to notes of its diatonic major scale? Which approximate most nearly to the remaining notes of the scale? Supposing the fundamental tone to correspond to 264 vibrations per second, determine for each instance the differences alluded to within the compass of the same octave.

5. State the laws which govern the vibrations of stretched strings according as their length, weight and tension are varied.

What must be the relative thicknesses of the first two strings of a tuned violin in order that their tension may be the same?

6. Give an explanation of the motion of the air in a pipe closed at one end. What overtones are absent, and why?

What is the length of a stopped organ pipe resounding to a note of which the vibration number is 100 per second?

7. Two tuning forks, one a fifth higher in pitch than the other, are set in vibration of equal intensity at the same instant. Draw the "associated wave" corresponding to the composite sound. Upon what does quality of sound depend? How do differences of phase affect the quality of a "clang"?

State Fourier's Theorem.

8. Describe and give an explanation of the effect produced by turning a vibrating tuning fork round close to the ear.

9. What are "beats"? Explain how they arise and how their number may be calculated. What is meant by the "beating distance" between two notes?

Draw the "associated wave" representing a beat caused by two notes differing in pitch by a tone.

10. Explain what is meant by saying that the octave is the only perfect concord.

11. Determine the vibration fractions representing the intervals between the successive notes of the diatonic scale.

What is a Comma?

What is meant by "equal temperament"? Point out in what parts of the scale the method is most defective.

THURSDAY, June 4, 1885. 2—5.

COUNTERPOINT.

Two hours are allowed for the uninterrupted working of this paper. At and after 4 o'clock, candidates will be called successively for *vivâ voce*, and those who have not then finished their paper-work have the option of continuing it until the whole have been catechised.

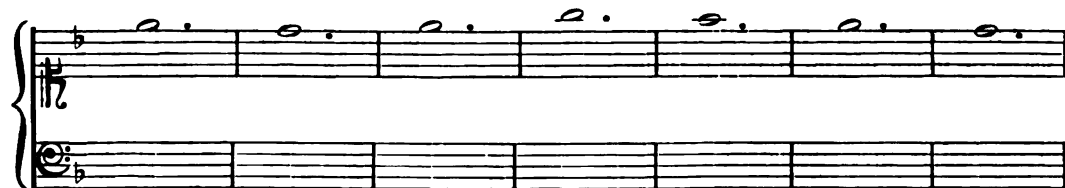
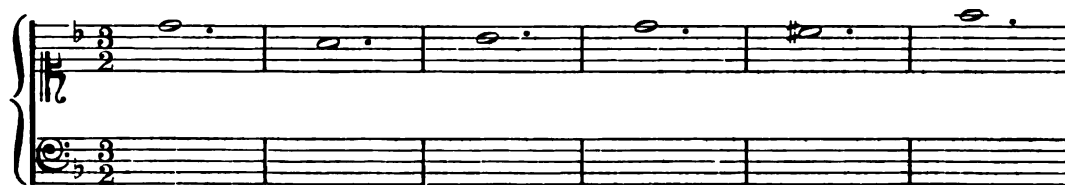
In all examples, the candidates must figure the bass. The figuring must denote the prevailing harmony, and not specify the particular intervals that appear in the written parts. Passing-notes must not be figured.

1. MAY a complete chord be used in Triple or Quadruple Counterpoint? State the reason for or against its employment.

2. State a rule for finding the increased number of inversions with the increased number of parts from Double to Triple, Triple to Quadruple, and Quadruple to Quintuple, Counterpoint.

3. Define the distinction between Plain, or Simple, and Florid Counterpoint.

4. Write a Counterpoint of the Third Species for Bass, with three notes against each harmony, below the following Subject. Include some specimens of "changing notes."



5. Write Counterpoint for Treble of the Fifth Species, and for Bass of the Fourth Species on the following Subject. The three parts to be sung together.

6. Write a Subject (or Cantus Firmus) in Semibreves, for Soprano, to be sung above the following Counterpoint. Name the Species of the Counterpoint.

7. Write Counterpoint of the Second Species for Soprano and Alto above the following Subject. The music must not quit the key of D minor throughout.

2. Add parts for Soprano, Alto and Tenor, according to the figuring, above the following Bass. Insert occasional passing-notes in any of the parts. All discords except passing-notes must be prepared. Mark by a cross all suspensions as distinguished from other discords. State at what bar, and into what key, the music modulates, and where it returns to the primary key.

The first system of musical notation consists of four staves. The top three staves are empty, intended for Soprano, Alto, and Tenor parts. The bottom staff is the Bass line, written in C-clef and common time. It contains a sequence of notes with figured bass underneath: 7, 7, 7, 9, 8, 7, 6, 6. The notes are: C4 (quarter), D4 (quarter), E4 (quarter), F4 (quarter), G4 (half), F4 (quarter), E4 (quarter), D4 (quarter).

The second system of musical notation consists of four staves. The top three staves are empty. The bottom staff is the Bass line, continuing from the first system. It contains notes with figured bass: 9, 8, 9, 8, 7, 5, 2. The notes are: C4 (quarter), B3 (quarter), A3 (quarter), G3 (quarter), F3 (half), E3 (quarter), D3 (quarter). There is a sharp sign (#) under the 7th figure, indicating a modulation to G major.

The third system of musical notation consists of four staves. The top three staves are empty. The bottom staff is the Bass line, continuing from the second system. It contains notes with figured bass: 4, 7, 7, 7, 7. The notes are: C4 (quarter), D4 (quarter), E4 (quarter), F4 (quarter), G4 (half), F4 (quarter), E4 (quarter), D4 (quarter). The 4th figure has a sharp sign (#) under it, indicating a modulation to D major.

3. Write parts for two violins and viola, according to the figuring, above the following Bass.

VIOLINO 1mo

VIOLINO 2do

VIOLA

VIOLONCELLO

4. State the keys of any twelve of Beethoven's Pianoforte Sonatas, and write one phrase from each Sonata you name.

5. Harmonise for Pianoforte the following Ground Bass in four different ways, giving special and various interest to the highest melody.

6. Write Tenor and Bass parts to accompany the following Hymn Tune. State the metre. The score to consist of three parts.

Melcombe.

The image shows a musical score for a hymn tune named 'Melcombe'. It is presented in two systems, each with three staves. The top staff of each system is a treble clef with a key signature of two flats (B-flat and E-flat) and a common time signature (C). The middle and bottom staves are empty, intended for Tenor and Bass parts respectively. The first system's top staff contains a melody of 16 measures, ending with a double bar line. The second system's top staff also contains a melody of 16 measures, ending with a double bar line.

SPECIAL EXAMINATION IN LAW FOR THE ORDINARY B.A. DEGREE.

FRIDAY, *June 5*, 1885. 9—12.

BLACKSTONE. I.

1. Give a brief account *either* of Magna Carta *or* of the Bill of Rights.
2. 'The king can do no wrong.' In what sense, if any, is this true?
3. What do you know of any changes made during the present century in the law relating to the qualification of voters at parliamentary elections?
[You are not required to notice any change that has taken place within the last five years.]
4. How is a sheriff appointed, and what are his main duties?
5. Describe tenure by chivalry or knight-service.
"All tenures of any honours, lands, tenements or hereditaments, or any estate "of any inheritance at the common law.....are hereby enacted to be turned into "free and common socage." Give as precisely as you can the date of the statute which contains these words.
6. Give a short account of copyhold tenure.
7. A tenant in fee simple died leaving as his only relations (1) a daughter and (2) a grandson the son of a dead child: to whom will the land descend?
Can an estate in fee simple descend from a man to his mother?
8. Explain the difference between an executor and an administrator.
9. Define a contract. What is meant by a *valuable consideration*?
10. Explain the nature of a mortgage. What do you understand by (1) an equity of redemption, (2) a foreclosure?
11. State the provisions of the Statute of Frauds touching the sale of goods.
12. Explain the terms advowson, villein regardant, ancient demesne, base fee, cestui que trust.

FRIDAY, June 5, 1885. 1—4.

BLACKSTONE. II.

1. GIVE a brief account *either* of the ancient *or* of the modern county-courts.
2. What do you know of the Court of Chancery?
3. X assaulted and beat Y and thereby committed a wrong against Z for which Z can recover damages.

What can you gather from this statement as to the relation in which Y and Z stand to each other?

4. State the law as to crimes committed by infants.
 5. Indicate by illustrations the distinction between murder and manslaughter.
 6. Explain (1) benefit of clergy, (2) peine forte et dure, (3) outlawry.
 7. Define burglary and arson.
 8. State the law as to the bailing of persons accused of crimes.
 9. What do you know of libel (1) as a crime, (2) as a civil injury?
Can one be guilty of libel if one has published only what is true?
 10. State the law as to the making of arrests without warrant.
 11. Describe Quarter Sessions.
 12. Explain the nature of an impeachment.
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SATURDAY, June 6, 1885. 9—12.

MACKENZIE.

1. STATE what you know of Papirius, Cneius Flavius, Salvius Julianus, Vacarius.
2. 'Under Augustus there were three classes of freedmen.'
What were these classes and how did they originate?
3. Sketch the course of the Roman Law on the subject of Divorce.
4. Explain the term '*Dominium ex jure Quiritium*.' How was this *dominium* acquired?
5. Explain the nature of *Emphyteusis*, giving the rights and obligations of the *Emphyteuta*.
6. Distinguish between *pignus* and *hypotheca*.
What was the *lex commissoria*?
What is meant by tacit hypothec? Give instances from Roman Law.
7. What distinction is drawn by Justinian between *locatio operis* and sale?
What are *operæ liberales*?
8. A through error pays B money which he does not owe. Under what circumstances can he recover it?
9. In what different ways may obligations be extinguished? Explain each briefly.
10. Explain the maxim '*Periculum rei venditæ nondum traditæ est emptoris*.' With what limitations must this rule be taken?
11. What were the rules of the Twelve Tables as to Intestate Succession? Explain their harshness. How far was this harshness remedied by the Prætors?
12. Explain briefly:—*Nota censoria*; *parapherna*; *quadriennium utile*; *collatio bonorum*; *quarta Pegasiana*; *bonorum possessio contra tabulas*; *leonina societas*; *læsis ultra dimidium*; *dies cedit*; *beneficium separationis*.

SPECIAL EXAMINATION IN HISTORY FOR THE ORDINARY B.A. DEGREE.

FRIDAY, *June* 5, 1885. 9—12.

OUTLINES OF ENGLISH HISTORY.

1. SHEW how feudalism in England was limited by the Conqueror.
 2. Of what parts were the dominions of Henry II. composed, and how did they come to him? Point out some results of the establishment of Scutage.
 3. "Edward I. was the heir of Earl Simon's policy." Explain this.
 4. Give some account of the causes of the peasants' revolt in 1381. How far was it successful?
 5. How do you account for the strength of the royal power in Tudor times?
 6. Explain the political situation at the accession of Elizabeth.
 7. It is said that an Erastian, an Anglican and a Papal party have always existed in the English church. Where would you place (a) Grosseteste, (b) Gardiner, (c) Laud, and for what reasons?
 8. Trace the history of the Long Parliament to the outbreak of the civil war.
 9. How far were the objects of the war of the Spanish Succession attained by the peace of Utrecht?
 10. What views of the French revolution were taken by English statesmen before 1793?
 11. Give short accounts of
 - (a) *either* The Canterbury Tales,
 or Utopia.
 - (b) *either* The battle of Dunbar,
 or that of Cape La Hogue.
 - (c) *either* The conquest of Bengal,
 or the union with Ireland.
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FRIDAY, June 5, 1885. 1—4.

HALLAM'S CONSTITUTIONAL HISTORY.

1. GIVE an account of the origin of the Court of Star Chamber and of its jurisdiction under the Tudor and Stuart sovereigns. When was it abolished?
 2. Give some account of the part played by Whitgift and Thomas Cartwright in the Ecclesiastical history of the reign of Elizabeth.
 3. '...The House of Commons under the Tudor princes and especially under Elizabeth was not so feeble and insignificant an assembly as has been often insinuated.' Give instances in support of this statement drawn from the reign of Elizabeth.
 4. What were the principal matters of complaint contained in the 'Petition of Right'? Describe the conduct of Charles I. with regard to this Petition.
 5. What do you know of Sir Giles Mompesson; the case of Commendams, the case of the Five Members?
 6. Give an account of Hampden's (Ship-Money) case.
 7. Give an account of the various measures passed in the reign of Charles II. against the nonconformists.
 8. What were the occurrences which led to the impeachment of Danby? What constitutional questions arose on the impeachment?
 9. State in their order the chief errors which led to the fall of James II.
 10. Give an account of any *two* of the following cases:
 - i. Skinner's case.
 - ii. Dr Sacheverell's case.
 - iii. The Aylesbury Election case.
 11. Sketch the course of Irish history from the accession of James I. to the Restoration.
 12. State how the schism of the non-jurors arose; and give short accounts of the law of tanistry and the 'new-modelling' of the corporations.
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SATURDAY, *June 6*, 1885. 9—12.

VOLTAIRE'S SIÈCLE DE LOUIS XIV.

1. "TURENNE and Condé were always successful at the head of French troops, always beaten when they commanded Spaniards."

State the facts on which this criticism is founded.

2. What was the Parliament of Paris, and why was it unable to establish a constitutional government during the troubles of the Fronde?

3. Mention any notable improvements in the art of war during this period.

4. Explain the circumstances under which William of Orange came to power in Holland in 1672.

5. Give the substance of Voltaire's judgment of James II.

6. Why was Louis willing to make peace at Ryswick? Mention his chief concessions.

7. Set down the date and state shortly the results of each of Marlborough's four great victories. Give a further account of *either* Ramillies *or* Malplaquet.

8. Give some account of the condition of the Huguenots between 1598 and 1682.

9. State clearly the question at issue in the Jansenist controversy. How does Voltaire regard it?

10. Draw up a genealogical table to shew the connexion of Louis XIV with contemporary kings of Spain and England.

11. Give short accounts of Retz, Schomberg, Racine, Cavalier, Fénelon.

CHANCELLOR'S MEDAL FOR LEGAL STUDIES.

MONDAY, 1 *June*, 1885. 9—12.

CONSTITUTIONAL LAW.

1. IN whom did the right to elect borough members originally reside, and by whom, and in what way, was it afterwards usurped?
 2. What changes in regard to the county franchise were made during the reigns of Henry IV. and Henry VI.? Explain the grounds and policy of these changes.
 3. When was the first charter of municipal incorporation granted? How did it affect the position of the burgesses?
 4. By whom were the mayors and other municipal officers appointed in the reign of Queen Elizabeth?
- Give some account of the "Case of Corporations," and explain its importance in the history of municipalities.
5. What encroachments on municipal freedom were made during the reigns of Charles II. and James II.?
 6. Give a full account of the case of *Ashby v. White*: explain clearly the principles involved in it and the results which followed.
 7. On what grounds did the "Common Councils" of boroughs claim the right of making new burgesses? Discuss the validity of the claim, and trace the consequences of its admission.
 8. By whom has the validity of parliamentary elections been determined from time to time since the end of the 14th century?
 9. What varieties of borough franchise were in existence at the time of the Reform Bill of 1832? Give the provisions of this Bill so far as they relate to boroughs.
 10. Enumerate the chief attempts at parliamentary reform which were made during the 18th century.
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MONDAY, 1 June, 1885. 1—4.

INTERNATIONAL LAW.

1. To what extent will occupation of the mouth of a river give a good title to inland territory and the control of navigation? Give a brief account of the controversy as to the French discovery of the Mississippi.

2. Under what circumstances can a good title to a country be acquired by occupation? State the rules recently agreed upon by the West African Conference in regard to annexations in Africa and discuss how far such rules are in accordance with the general principles of International Law.

3. To what extent according to modern practice has the sea been appropriated by States? Discuss the nature of the rights enjoyed by a State over its territorial waters.

4. Owing to the movements of tides and currents a shoal of sand is formed just inside the mouth of a river but more than three miles distant from either bank. The shoal is covered by water every spring tide but at other times is uncovered. The river separates two States. How far can a title be acquired to the shoal, and by whom?

5. State the view taken by Grotius in regard to the dereliction of property. What is the effect of the abandonment of a country by the State that discovered and occupied it?

6. Give an account of the controversy between Great Britain and the United States in regard to the Oregon territory and state how the same was eventually settled.

7. What are the effects of the conquest of a part of the territory belonging to another State on (a) the nationality of the inhabitants, (b) the political constitution, (c) the laws and (d) the public debt, of the conquered territory?

8. Discuss what principles ought to be applied where a country inhabited by a barbarous or uncivilised people is discovered and annexed by a civilised State in regard to the rights of the inhabitants to the territory. On what principles has the United States acted towards the Indians?

9. "Controversies concerning kingdoms and their boundaries are not extinguished by any lapse of time." Discuss this statement and consider how far prescription gives a good title to (a) a discovered island, (b) a conquered country.

10. Previous to 1850 large sums were advanced by a bank to Nawab Asophoo Dowlah then on the throne of Oudh for the purposes of that State. It was agreed that the sums should be repaid out of the revenues of the State. The money was principally used to discharge certain arrears due to the East India Company. In 1856 Oudh was annexed by the East India Company. In 1858 an Act of Parliament was passed under which the Queen assumed the government of the territories of India and which vested in Her Majesty all the real and personal property of the East India Company. It was also provided that all persons might have the same remedies and proceedings against the Secretary of State for India as they would have had against the Company. In 1874 an action was brought by the bankers against the Secretary of State for India to recover the loan. Discuss the rights of the parties.

TUESDAY, June 2, 1885. 9—12.

1. (a) Nexum Manilius scribit, omne quod per libram et aes geritur, in quo sint Mancipia. Mutius, quæ per aes et libram fiant ut obligentur, præter quæ Mancipio dentur. Hoc uerius esse, ipsum uerbum ostendit de quo quaerit; nam idem quod obligatur per libram neque suum fit, inde nexum dictum. Liber qui suas operas in seruitutem pro pecunia quadam debebat, dum solueret, nexus vocatur. Hoc C. Poplilio auctore, Visolio dictatore, sublatum ne fieret, ut omnes, qui bonam copiam iurarunt, ne essent nexi sed soluti.

VARRO *L. L.* VII. 105.

(b) Victum eo die ingens uinculum fidei: iussique consules ferre ad populum, ne quis, nisi qui noxam meruisset, donec poenam lueret, in compedibus aut in neruo teneretur; pecuniæ creditæ bona debitoris non corpus obnoxium esset. Ita nexi soluti, cautumque in posterum ne necerentur.

LIVY VIII. 28.

Translate the former of these passages, shewing the proper meaning of *nexum*. Date the law referred to in the latter passage, explaining its scope and object. How do you reconcile these with the following passage from Gaius' Institutes?

Est etiam alia species imaginariæ solutionis per aes et libram. quod et ipsum genus certis in causis receptum est, ueluti si quid eo nomine debeatur quod per aes et libram gestum est, siue quid ex iudicati causa debebitur.

GAIUS III. 173.

2. What forms of contract are recognised in the extant fragments of the Twelve Tables?

3. Discuss fully the suggested derivation of Stipulation from Nexum, shewing, in accordance with your view, which explanation of the word *stipulatio* you prefer.

4. On what considerations—natural, historical, or purely arbitrary—do you consider that Gaius places Real contracts first in the order of his four classes? In contracts said to be made *re*, what do you take to be the one common feature?

5. Shew how the Roman law of Contract was developed by the allowance of *actiones praescriptis verbis* and *actiones in factum*.

6. Distinguish the successive stages of the Roman Mortgage or Pledge, having regard principally to the rights *in personam* thereby created.

7. Translate, explaining the technical terms:—

Petebatur apud me pecunia quæ dicebatur data numerataque. Debitor clamitabat probari apud me debere pecuniam datam consuetis modis, expensi latione, mensae rationibus, chirographi exhibitione, tabularum obsignatione, testium intercessionem.

AULUS GELLIUS 14, 2.

Describe the different classes of Literal obligation, shewing which had become obsolete in the time of Justinian and why. Explain the phrase *nomen transcriptitium*.

8. State what you consider to be the true principle of Agency, and trace the development of this principle, so far as it was attained, in Roman Law.

TUESDAY, *June 2*, 1885. 1—4.

THE LAW OF LIBEL AND SLANDER.

1. EXPLAIN the meanings that have attached to the following terms in the law of libel and slander:—Malice in law, Actual malice, Absolute privilege, Qualified privilege. Can you suggest any better mode of expressing the legal notions underlying these terms?

2. Discuss the following propositions, and apply your reasoning to the cases annexed:—

(1) "Words not defamatory in their nature are not actionable even though followed by special damage."

Case. A. wrote of a candidate for the mastership of a national school that he was a "conscientious Methodist", and thereby prevented his election.

(2) "Pecuniary loss to the plaintiff is the gist of the action for libel or slander."

Case. B. published a libel throwing ridicule upon an undischarged bankrupt.

(3) "Christianity is part and parcel of the law of England."

Case. C. published an insulting attack upon the Christian faith; D. published a like attack upon the Jewish faith.

3. What amounts to publication of a slander? In what cases, if any, is the originator of a slander responsible for its repetition by another person?

4. How far can words which tend to depreciate property, without affecting the reputation of the owner, give rise to an action?

A., a medical man, wrote to one of B.'s tenants, whom he had been attending, that the illness was due to defects in construction of B.'s house. The tenant was thereby induced to leave and to take a vacant house belonging to A. Advise B. as to his remedy against A. and as to the defence he may have to meet.

5. What, if any, are the restrictions upon the right to publish reports of judicial proceedings?

The manager of a railway company, by order of the directors, placarded the stations with the following notice: "Caution, J. S. (name and address given in full) was convicted on the 9th day of May, 1881, of travelling in a 1st class carriage with a 3rd class ticket and fined 40s. and costs." Can J. S., under any circumstances, sue or prosecute the company or any one, (1) if the notice be correct or, (2) if it errs only in overstating the fine?

6. Can a wife in any case sue or prosecute her husband for libel or slander upon herself or her property?

A.'s wife carries on a grocery business separately from him. A. tells several of her customers that she sands the sugar. Has she any remedy?

7. Show how the position of a newspaper proprietor differs from that of ordinary defendants in proceedings for libel, and mention the chief statutory provisions on the subject.

8. A bookseller is offering copies of a libel for sale. Are there any legal means of preventing the sale?

9. State what you know of the facts, questions and decision in any *one* of the following cases:

Stockdale v. Hansard,

Wason v. Walter,

Dawkins v. Lord Paulet.

10. Explain and illustrate the position taken by English law with respect to words spoken to the detriment of a private person, pointing out any particulars in which you may consider it defective.

LAW TRIPOS.

MONDAY, *May* 25, 1885. 9—12.

REAL AND PERSONAL PROPERTY.

1. STATE the provisions of the Statute of Uses. Distinguish a 'Use' from a 'Trust.' What effect (if any) has the Statute of Uses on the following grants?

To *A* and his heirs to the use of *A* and his heirs.

To *A* and his heirs in trust for *B* for life.

To the Corporation of London to the use of *B* and the heirs of his Body.

2. Explain what is meant by the *cy près* doctrine. Illustrate its application (a) to a gift to the son of an unborn child, and (b) to a gift in favour of a Charity.

3. What powers of (a) sale, (b) leasing, has a tenant for life?

4. Explain the following statements:—

"Every manor is of a date prior to the Statute Quia Emptores."

"A deed of grant is an innocent conveyance."

"A purchaser may require a 40 years title."

"Inheritances shall lineally descend in the first place to the issue of the last purchaser in infinitum."

5. Explain the nature of and account historically for the following:—a tithe-rent charge, an advowson, a lease by estoppel, quit rent, socage tenure, equitable assets.

6. What statutory powers are now vested in a mortgagee? Who can grant a lease of mortgaged premises? What special precautions ought to be observed in settling the terms of such a lease?

7. Discuss the devolution of the estate in the following cases:—

(a) *A* the trustee of real and personal estate dies intestate.

(b) *B* the purchaser of landed property dies intestate leaving two sons *C* and *D*, *C* being the elder. *C* dies bequeathing "all his real estate" to his only son *E*. *E* dies intestate leaving an illegitimate child. What would have been the result if *E* had himself been illegitimate?

8. What remedies are open to the landlord of a house let from year to year when the rent falls in arrear? How is the relation of landlord and tenant affected by (a) the house being burned down, (b) the house proving unfit to live in by reason of its insanitary condition?

9. When if at all will the rights of *A*, *B*, *C*, and *D* respectively be barred in the following cases? State in each case the point of time from which time begins to run. What would be the result if *B* were an infant?

(a) *A*, a mortgagor, permits the mortgagee to enter into possession of the mortgaged premises.

(b) *B*, a legatee of a legacy charged upon land, takes no steps to recover the legacy.

(c) *C* as landlord lets in a tenant to occupy without paying rent.

(d) *D*, a *cestui que trust*, neglects to enforce a claim for breach of trust against his trustee.

10. To what extent and in what manner can the following objects be carried out?

(a) The transfer of trust property on the appointment of a new trustee in place of one deceased to such new trustee and the remaining old trustees.

(b) The making the property of a married woman which she is restrained from anticipating liable for her debts.

(c) Release a power.

(d) Settle an estate for the longest possible time.

11. How may the liabilities upon a contract be discharged after breach?

12. Define *Warranty* and explain the remedies of a purchaser for breach of warranty in the case of (1) specific, (2) unascertained goods.

A sells two horses to *B* and warrants both sound. He knows one is unsound but erroneously believes the other to be sound. What are *B*'s remedies?

MONDAY, May 25, 1885. 1—4.

REAL AND PERSONAL PROPERTY.

1. EXPLAIN Patent, Copyright, Trademark, and indicate generally the nature of the rights acquired in each case.

2. *A* sells to *B* a watch which belongs to *C*. In what cases and by what means can *B* obtain a good title to the watch?

3. How far has marriage at any time operated, without further event or assurance, to confer an interest in real or personal property? Can it in any case so operate now?

4. *A*'s goods are in *B*'s house. Under what circumstances may *A* be deprived of his property (1) by the landlord or (2) by the creditors of *B*?

5. In what cases is a voluntary settlement of Personal property liable to be set aside?

A married woman carrying on business separately from her husband is desirous of settling a portion of her separate property, upon herself for life and then for her children, so as to protect capital and income from creditors present or future. How far is it possible to effect this?

6. A will contained only a devise of Whiteacre to *A*, a bequest of certain stock to *B*, and an appointment of *C* as executor. Testator had other real estate and also general personal estate exceeding the amount of his debts. What steps are necessary to complete the title of *A*, *B*, the heir and the next of kin respectively to their interests?

7. Explain and illustrate what is meant by distribution *per stirpes*. Within what limits is such a mode of distribution adopted by English law?

8. What is a *Corporation*? Distinguish between the principal classes of Corporations (1) as to origin, (2) as to the interest and liabilities of the members.

9. What is a negotiable instrument? Mention the principal kinds in use. Is a cheque, drawn to order and crossed with the name of a particular bank, a negotiable instrument?

10. Explain *Necessaries* in relation to the contracts of infants.

A boy of 15 buys a watch on credit. How can the seller enforce payment, (1) against the boy, or (2) against his father?

11. What is the contract of *guarantee*? What defences may be open to a person sued on such a contract?

A says to a tailor "Make B a suit of clothes on my credit." The tailor supplied the goods to B, who promised to pay for them in a month, but next day went bankrupt. The tailor is now suing A. Is there any defence?

12. Give the provisions of the Statute of Frauds as to sale of goods. Is there any difference between the 4th and 17th sections in their effect upon transactions not complying with their provisions?

On May 1st a verbal bargain was struck for the sale of 3 cows from A to B for £50, payment to be made on the 7th, and the cows to be delivered on the 8th. On the 6th one cow died. B not being informed of this paid the £50 on the 7th, but next day, when the remaining two cows were delivered, he refused to accept them and now demands his money back. What is his legal position?

TUESDAY, May 26, 1885. 9—12.

CRIMINAL LAW.

1. EXPLAIN *Criminal proceeding*; *Indictment*; *Prosecutor*; *Trial at bar*.

2. How far is the maxim *volenti non fit injuria* applicable to English Criminal Law?

3. Under what circumstances may (1) infancy or (2) drunkenness afford a defence to a criminal charge? A boy of 8 picks a pocket, and a rich man who is drunk picks a friend's pocket. Explain the difference between the defence which it is possible to set up in the one case and in the other.

A shoots B and seriously injures him. What is the legal nature of his offence if it prove:

(1) that A through drunkenness believed that B was trying to rob him?

(2) that A had no quarrel with B, but was firing in a public street from a spirit of drunken recklessness?

Would it in either case make any difference that the drunkenness was involuntary and brought about by a trick played upon A?

4. Give the Common Law definition of *arson*.

A tenant for life sets fire to the principal mansion-house (which is uninhabited and uninsured) in order to save the expense of keeping it up.

A tramp, after lighting his pipe, throws the match upon some loose straw by a rick, knowing it may probably set fire to the rick, but being indifferent whether it does or not. The rick is burnt in consequence.

Is either of these persons guilty of any offence?

5. Notices are affixed about a gentleman's park and coverts that "Trespassers will be prosecuted according to law." How far can this threat be carried out in the different cases that may arise? Does the giving of the notice make any difference?

6. J. S. is indicted for feloniously marrying M. H., his wife R. (it is alleged) being alive. Mention all the grounds of defence possibly available.

A's wife eloped from him in 1870. In 1879, having heard nothing of her since, he married B. Lately he ascertained that the first wife died in 1881, and there-upon he turned B away and married her sister. Has he committed bigamy in either case?

7. In what cases may spoken words render a man liable to a criminal charge?

Can a man commit *murder* by words only?

8. Under what circumstances is homicide justifiable?

A is aroused from sleep by a burglar breaking into his house. Rushing down he meets a policeman in the hall, and, taking him for the burglar about to attack him, he aims a blow at him and kills him. Meanwhile his son, from an upper window, sees the real burglar escaping over a back wall and shoots him dead. How far is A or his son criminally responsible?

9. Give a short historical sketch of the statutes relating to high treason.

10. Explain clearly the effect of Fox's Act upon the trial of indictments for libel, pointing out the extent to which its provisions are consistent or inconsistent with the general principles of the Criminal Law.

11. State generally the circumstances which will justify a private person in arresting without warrant.

If I see a man running away with a purse in his hand, pursued by a crowd shouting "Stop thief," may I legally stop him?

TUESDAY, May 26, 1885. 1—4.

JURISPRUDENCE.

1. EXPLAIN the meaning of a "status." "The tria capita are not properly status." Explain and discuss this statement.
2. "The division of the Corpus Juris into jus personarum, jus rerum and jus actionum is a gross logical error." Explain and criticise this statement, and compare Austin's classification with the Roman classification.
3. What is meant by Jus publicum? Discuss what place the Jus publicum ought to occupy in a scientific classification of law.
4. Distinguish and analyse the terms Property, Easement, and Servitude. What is meant by a negative servitude?
5. Discuss Blackstone's division of the Corpus Juris into Rights and Wrongs. What view does Austin take of such division? Criticise such view.
6. Explain the nature of the following rights and indicate the place of each in Austin's classification:
 - a right under a quasi contract;
 - the right of a legatee to a legacy;
 - the right of an unsuccessful party to appeal;
 - the right arising from the publication of a libel.
7. What meaning does Austin give to the word "title"? What are his objections to the use of the term by English lawyers? Discuss what is the "title" where *A* sells *B* a chattel, and where *D* sells *E* an estate in Fee Simple.
8. Mention the chief classifications of things found in the Roman and English law respectively. Point out the principles on which each classification is based, and discuss how far each classification has influenced the growth of the law.
9. Compare Austin's classification of Servitudes with that of the Roman Law and that of the French Code.
10. Explain and comment on the following passages:
 - "A jus in re (with its corresponding obligation) is passive."
 - "Actio non est jus, sed medium jus persequendi."
 - "We should call this right (i.e. usufructus) an estate for life."
 - "The right of an heir is contingent."

WEDNESDAY, *May* 27, 1885. 9—12.

INTERNATIONAL LAW.

1. GIVE a short sketch of the history of International Law before the time of Grotius.
 2. In what respects does the Treaty of Westphalia mark an era in the history of International Law?
 3. How far, if at all, does International Law recognise the right of one state to interfere in the internal affairs of another state?
 4. Under what circumstances are 'Reprisals' held to be justifiable? Illustrate your answer by historical instances.
 5. How far and for what purposes does the authority of a state extend over the sea?
 6. Mention instances of (a) rightful and (b) wrongful 'Recognition of Independence.' State clearly the grounds of your approval and condemnation.
 7. To what extent is private property liable to capture in time of war? Discuss the expediency of altering the existing law on this subject.
 8. What were the principal subjects in debate at the Brussels conference of 1874, and what were the results arrived at?
 9. What do you consider to be the test of a valid Blockade?
 10. How far do Foreign Enlistment Acts afford a true measure of neutral duty? Illustrate your answer by reference to the English and American Foreign Enlistment Acts.
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WEDNESDAY, *May* 27, 1885. 1—4.

CONSTITUTIONAL HISTORY.

1. GIVE the provisions of the constitutional clauses of *Magna Carta*.
Trace the later history of these clauses.
 2. Sum up shortly the constitutional results of the minority of Henry III.
 3. Trace the growth of parliamentary representation during the reigns of John, Henry III. and Edward I.
 4. Compare the scheme of government which was drawn up in the Oxford Parliament of 1258 with the later constitution of 1264. How do you account for the difference between them?
 5. Give a short sketch of the relations of England and the Papacy during the reigns of John and Henry III.
 6. Describe the policy of Hubert de Burgh, and compare his administration with that of William Marshall.
 7. Give the provisions of the Statute of Mortmain (7 Ed. I. c. 2). What previous legislation had there been on this subject?
 8. In what principal respects was the reign of Edward I. a time of constitutional progress? To whom do you consider that the credit of this progress is due?
 9. Explain and illustrate Edward's policy in regard to Feudalism.
 10. What were the causes and what the results of the constitutional crisis of 1297?
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THURSDAY, May 28, 1885. 9—12.

ROMAN LAW. I.

1. DESCRIBE, with dates, the principal constitutional changes effected in Roman law in the fourth century before Christ.

2. Sketch the general order of subject-matter in the Digest of Justinian; and state Bluhme's theory as to the arrangement of extracts in a title.

3. Translate, with full explanatory notes:

Multis autem modis manumissio procedit: aut enim ex sacris constitutionibus in sacrosanctis ecclesiis aut uindicta aut inter amicos aut per epistulam aut per testamentum aut aliam quamlibet ultimam uoluntatem. sed et aliis multis modis libertas seruo competere potest, qui tam ex ueteribus quam nostris constitutionibus introducti sunt.

Why is it said that manumission "a iure gentium originem sumpsit"? Enumerate the principal restrictions upon the power of manumission before the time of Justinian.

4. State the conditions of *iustae nuptiae* and *conuentio in manum*, and mention any modes of *legitimation* known to Roman law.

5. Translate and explain:

Qui alienis negotiis gerendis se optulit, actionem furti non habet, licet culpa eius res perierit: sed actione negotiorum gestorum ita damnandus est, si dominus actione ei cedat. eadem sunt in eo, qui pro tutore negotia gerit, vel in eo tutore, qui diligentiam praestare debeat, ueluti qui ex pluribus tutoribus testamento datis oblata satisfactione solus administrationem suscepit.

Illustrate the statement that *tutela* was regarded in earlier times as a right and in later times as a duty. How does *capitis minutio* come under the subject of *tutela*?

6. Point out the rules of law, as to ownership, which may come into question in alleged theft of *apes ferae*, *pauo mansuetus*, *fetus pecudum*, *partus ancillae*, *fructus pendentes*, *iactum ex naue*.

7. Translate, with brief notes :

Quod autem ad eas res, quae solo continentur, expeditius procedit. ut si quis loci uacantis possessionem propter absentiam aut negligentiam domini, aut quia sine successore decesserit, sine ui nanciscatur. qui quamuis ipse mala fide possidet, quia intellegit se alienum fundum occupasse, tamen, si alii bona fide accipienti tradiderit, poterit ei longa possessione res adquiri, quia neque furtium neque ui possessum accepit: abolita est enim quorundam ueterum sententia existimantium etiam fundi lociue furtum fieri; et eorum utilitati, qui res soli possident, principalibus constitutionibus prospicitur, ne cui longa et indubitata possessio auferri debeat.

State the footing on which Justinian ultimately placed the law of Usucapion and Praescription.

8. Translate and explain the following passages and phrases :

(a) Nunc vero alius heres testamento instituitur, a quo etiam legata relinquuntur, alius dicis gratia propter ueteris iuris imitationem familiae emptor adhibetur.

(b) Ita do, ita lego, ita testor.

(c) Nostra autem constitutio, quam cum magna fecimus lucubratione, defunctorum uoluntates ualidiores esse cupientes et non uerbis, sed uoluntatibus eorum fauentes, disposuit, ut omnibus legatis una sit natura et, quibuscumque uerbis aliquid derelictum sit, liceat legatariis id persequi non solum per actiones personales, sed etiam per in rem et per hypothecariam.

What were the principal differences, in the time of Gaius, between a *legatum* and a *fideicommissum*?

9. Translate and explain :

Sed illud interest, quod altero casu, id est cum deducta sive praecepta aliqua re restituitur hereditas, in solidum ex eo senatus consulto actiones transferuntur et res quae remanet apud heredem sine ullo onere hereditario apud eum manet quasi ex legato ei adquisita, altero uero casu, id est cum quarta parte retenta rogatus est heres restituere hereditatem et restituit, scindantur actiones et pro dodrante quidem transferantur ad fideicommissarium, pro quadrante remaneant apud heredem.

10. State the source and the objects of *bonorum possessio*, enumerating the different classes of persons to whom it was granted, in their order of priority.

THURSDAY, May 28, 1885. 1—4.

ROMAN LAW. II.

1. EXPLAIN in detail the common property or general connexion among the various heads of subject-matters treated in the second and third books of Gains' Institutes. Discuss the significance of the different arrangement adopted, as to part of that subject-matter, by Justinian.

2. Translate and explain :

Obligationum substantia non in eo consistit, ut aliquod corpus nostrum aut servitutem nostram faciat, sed ut alium nobis obstringat ad dandum aliquid vel faciendum vel praestandum.

Illustrate the terms *dare*, *facere*, *praestare*, pointing out the different force of the last word as coupled with *custodiam*, *dolum*, *actionem*.

3. Furtum est contrectatio rei fraudulosa vel ipsius rei vel etiam usus eius possessionisue.

Comment upon the several points of this definition of *furtum* given by Justinian, shewing where, if at all, it requires to be supplemented or modified. How far do you consider that the supposed derivation of the word has affected the juridical conception of the offence?

4. Enumerate the different classes of persons entitled to the *actio furti*, and covered by the expression *is cuius interest*.

Translate and explain :

Is qui precario servum rogauerat subrepto eo potest quaeri an habeat furti actionem. et cum non est contra eum civilis actio (quia simile donato precarium est) ideoque et interdictum necessarium visum est, non habebit furti actionem. plane post interdictum redditum puto eum etiam culpam praestare et ideo et furti agere posse.

5. What are the general conditions under which a master was liable for the contracts of his slave?

Translate and explain the following passage, discussing particularly the meaning of the word *vulgaris*.

Si servus nauem exerceat non voluntate domini, de eo, quod ibi perit, vulgaris formula in dominum danda est, ut quod alter admisit 'dumtaxat de peculio,' quod ipse exercitor, adiciatur 'ut noxae dederet.' igitur si manumissus sit, persecutio quidem in peculio manebit adversus dominum intra annum, noxalis ipsum sequetur. Interdum et manumissus et qui eum manumissit, ob furtum tenetur, si ideo manumissit, ne furti cum eo agi possit: sed si cum domino actum fuerit, ipso iure manumissum liberari Sabinus respondit, quasi decusum sit.

6. Give instances

- (a) of misuser amounting to *furtum*,
- (b) of the obtaining of property under false pretences, *not* amounting to *furtum*,
- (c) of *furtum* where no *actio furti* is allowed,
- (d) of *furtum* by *dominus rei*.

7. After contract of sale but before delivery of the article sold, distinguish the rights *in rem* and *in personam*, of the two parties, recognised by Roman law. Shew which of them, in consequence, has the *actio furti* in case of theft, independent of any special covenant for safe custody.

8. Translate:

Potest dici officio iudicis, qui de proprietate cognoscit, contineri, ut non aliter iubeat rem subreptam restitui, quam si conductionem petitor remitteret: quod si ex conductione ante damnatus reus litis aestimationem sustulerit, ut aut omnimodo absoluat reum aut (quod magis placet), si paratus esset petitor aestimationem restituere nec restituetur ei homo, quanti in litem iurasset, damnaretur ei possessor.

Describe an *actio arbitraria* in general, giving Justinian's account of the name, and shewing the connexion of the remedy with *in litem iusiurandum*.

9. Explain the following words and phrases:—*precarius*, *redhibitio*, *mensae scriptura*, *postliminium*, *damni decisio*, *possessio pro possessore*, *in crimen subscriptio*, *plagiarius*.

10. Give reasons for the following dicta:—

- (a) *Rei dotalis nomine, quae periculo mulieris est, non mulier furti actionem habet, sed maritus.*
- (b) *Filius familias miles ipse patri furti non tenebitur, serui autem sui nomine castrensis tenebitur, si patri seruus furtum fecerit.*
- (c) *Infitiando depositum nemo facit furtum: sed si possessionem eius apiscatur interuertendi causa, facit furtum.*
- (d) *Hereditariae rei furtum fieri Iulianus negabat.*
- (e) *Cum raptor omnimodo furtum facit, manifestus fur existimandus est: is autem, cuius dolo fuerit raptum, furti quidem non tenebitur, sed ui bonorum raptorum.*

11. Translate:

Si uerbi gratia ex empto agamus, ut nobis fundus mancipio detur, debemus ita praescribere: Ea res agatur de fundo mancipando: ut postea, si uelimus uacuam possessionem nobis tradi, de tradenda ea uel ex stipulatu uel ex empto agere possimus. nam si non praescribimus, totius illius iuris obligatio illa incerta actione: Quidquid ob eam rem Numerium Negidium Aulo Agerio dare facere oportet: per litis contestationem consumitur, ut postea nobis agere uolentibus de uacua possessione tradenda nulla supersit actio.

Illustrate from this passage the original meaning of *praescriptio* and shew how the term attained its later signification.

FRIDAY, *May* 29, 1885. 9—12.

ESSAYS AND PROBLEMS.

[*Not more than eight to be attempted.*]

1. A TESTATOR by his will, dated 1852,

(a) directs his trustees to invest a fund in certain property and to pay the interest to arise from such investment to *A* for her life, and after her death in trust for all and every the children of *A* as should be living at her death, and the issue then living of such of them as should have died in her lifetime in equal shares, such issue to take their respective parents' shares; any female taking under the will to take for her sole and separate use without power of anticipation;

(b) bequeaths all his real estate to *B*, directing that the income should be applied to the payment off of a mortgage on the estate, and that on the payment off of such mortgage the real estate should be sold and the proceeds divided between such of his grandchildren as should be living at the time of the sale as *B* should by will appoint.

The testator died in 1854. *B* made a will in 1876, exercising the above power of appointment in favour of *C*, *D*, and *E*, grandchildren of the testator, and died in 1878 before the mortgage was fully paid off.

Discuss the effect of the two wills.

2. *A*, by his will dated 1870, devised to *B* a married woman freehold and leasehold property for her sole and separate use. He died in 1876. In 1877 *B* and her husband *C* executed a settlement whereby *B* and *C* conveyed the freeholds and *C* demised the leasehold subject to the payment of a nominal rent to trustees upon trust to permit *B* to receive the rents and profits during her life, and after her death upon trust for *C* for life, and after his death upon trust for their children. In 1879 *B* and *C* mortgaged the property to *D*. This mortgage was unknown to the trustees. Interest on the mortgage being in arrear *D* gave notice to the trustees of his intention to sell the property, and thereupon the trustees brought an action against *D* to restrain him from proceeding to a sale. Discuss the rights of the parties.

3. Write an essay on the history of the relation of Landlord and Tenant.

4. Write an essay upon the following maxim in its relation to the existing law:
Husband and wife are one person.

5. *A*, by falsely representing that he was a traveller in the watch trade and had a good opportunity of selling some watches, induced *B* to let him have some cheap watches on credit, and to entrust him with some more expensive ones to sell on commission. He pawned all the watches at the nearest pawnbroker's, was afterwards arrested, but died before trial. Can *B* recover the watches, or any of them, from the pawnbroker, either upon payment of the amount advanced or without payment? Would it have made any difference if the representation had been true?

6. Some compositors employed to set up the leading article of a conservative journal managed to interpolate a seditious passage. The result was, as they intended, that the alteration escaped notice until after publication, and the circulation of the paper was injured in consequence. Have they committed any offence or offences?

7. Describe the different forms of legislation subsisting under the Roman empire, shewing how far, and when, any of them fell into disuse.

8. Titius, having bought a slave without warranty of character, lends this slave to Maevius without cautioning him. Maevius pledges the slave to his creditor Seius, informing him that he cannot answer for the slave's conduct. The slave steals property of Seius. What is Seius' remedy, Maevius' probable action in consequence, and the rights finally resulting to Titius as against Maevius or otherwise?

9. State the disqualifications of *peregrini* under the Roman republic and early empire as to rights of property, rights of obligation, power to dispose of property by will, and power to succeed to property. Point out any methods by which these disqualifications were removed or obviated.

10. What rights and liabilities arise in respect of freight when (a) the ship of a belligerent is captured having neutral goods on board, (b) the goods of a belligerent are taken from a neutral ship?

11. Explain clearly the relation of treaties to International Law.

12. Describe the present position and estimate the practical value of International Law.

HISTORICAL TRIPOS.

MONDAY, June 1, 1885. 9—12.

CONSTITUTIONAL HISTORY AND LAW.

Not more than nine questions are to be attempted.

1. "THE King's Peace." Examine this conception and trace its development in English history.

2. Explain the organization of the shire in the eleventh century. By what chief steps was the shire brought into its present connexion with the central organization?

3. "Nullus liber homo capiatur, aut imprisonetur, aut dissaisiatur, aut utlagetur, aut exuletur, aut aliquo modo destruatur, nec super eum ibimus, nec super eum mittemus, nisi per legale iudicium parium suorum vel per legem terræ."

Translate and explain the meaning of the various terms used, and the distinction implied in the word *vel*. What subsequent statutes developed the principle contained in this clause?

4. Trace the history of the tribunals now respectively called "The Queen's Bench Division of the High Court of Justice;" "The Chancery Division of the High Court of Justice;" and "The Judicial Committee of the Privy Council."

5. Give the definition of Treason contained in the statute 25 Ed. III. Shew what extensions, and under what circumstances in each case, have been given to this definition, and state the law of Treason as it now stands.

6. Explain the difference between baronage by tenure and baronage by writ. Compare the constitutional position of the barons in England and in France in the XIVth century.

7. "Whereas the raising or keeping of a standing army within the United Kingdom of Great Britain and Ireland in time of peace, unless it be with the consent of Parliament, is against law."

Whence is this recital in the annual Mutiny Act derived, and on what facts is it based?

8. The statute 1 Eliz. c. 1 is entitled, "An Act *restoring* to the Crown the *ancient jurisdiction* over the State ecclesiastical and spiritual and abolishing all foreign power repugnant to the same."

How far are the statements italicized justified by history?

9. Examine the Stuart claim to the Dispensing Power. State and discuss the judgment in Hales' case.

10. Sir Joseph Jekyll, arguing in the Sacheverel case, said, "If the doctor instructed his counsel to insinuate that there was any innovation in the Constitution wrought by the Revolution, it is an addition to his crime. The Revolution did not introduce any innovation, it was a restoration of the ancient fundamental constitution of the kingdom, and giving it its proper force and energy."

Examine this statement.

11. "The power of the Crown, almost dead and rotten as prerogative, has grown up anew with much more strength and far less odium under the name of influence." (Burke—Present Discontents.)

Examine this allegation with reference to the time at which it was made.

12. In what main respects did the Constitution of the United States of America as finally established differ from that of England in the reign of George III.?

MONDAY, June 1, 1885. 1½—4½.

ENGLISH HISTORY, 1560—1629.

Not more than eight questions are to be attempted.

1. DESCRIBE the relations between England and Spain in the first ten years of Elizabeth's reign, and shew by what considerations the policy of Philip II. was in these years determined.

2. Trace the connexion between English maritime enterprise and the beginnings of English colonisation in the reign of Elizabeth. What do you know concerning the English military and naval system in that reign?

3. Mention and discuss any problems in the history of Mary, Queen of Scots, the solution of which depends on the value of extant documents.

4. State precisely the time, character and extent of Elizabeth's intervention in the affairs of the Netherlands; and account for Leicester's failure in that country. Describe and illustrate his position as a party-leader in England.

5. Describe the operation of the Recusancy laws under Elizabeth and James I.; and give some account of the organisation of the Church of Rome, and of the labours of the Jesuits in particular, in England during their reigns.

6. The last years of Elizabeth have been described as a struggle for ascendancy between two parties in Court and State. Examine this view.

7. What were the difficulties on the two sides of the Border in the way of James I.'s scheme of a union between England and Scotland?

8. Trace the growth of Puritanism in England till the period when it became a political power; and describe the relations of religious parties in the country about that time.

9. Describe and account for the corruptions in the English administrative and judicial system in the earlier half of the reign of James I.; and give some account of the Parliament of 1614.

10. What were the engagements of James I. towards the Protestant Union? Narrate in outline the diplomatic and other action of James I.'s government in the question of the Palatinate. Discuss the view that Bristol's ideas on this head, while 'too much in advance of the times to meet with acceptance on either side,' were 'the highest wisdom when contrasted with those passing fancies which floated in the brains of Charles and Buckingham.'

11. (a) Give some account of the following:

The Ridolfi Plot; the Bond of Association; the Amboyna Massacre; O'Dogherty's Rising.

(b) What do you know concerning the financial history of the last ten years of Elizabeth? What were the terms of the 'Great Contract,' and why did it break down?

(c) Sketch the career and character of any *one* of the following:

Arthur Earl Grey de Wilton; Archbishop Whitgift; Sir Edward Coke.

TUESDAY, *June* 2, 1885. 9—12.

FRENCH HISTORY (A.D. 987—1314).

1. "It was the Capetian revolution which gave Normandy her definite position in Gaul and Europe." Illustrate this statement.
 2. Sketch the action of the Normans and the French in Sicily and Southern Italy from the Norman occupation of Sicily down to the Sicilian Vespers.
 3. Discuss the character and scope of Suger's policy.
 4. Investigate the legality of the proceedings of Philip Augustus against John of England.
 5. Give the main facts in the struggle between the principles of election and heredity in connexion with the Crown during the Capetian dynasty.
 6. Describe the political condition and territorial divisions of France at the accession of Hugh Capet and compare them with those at the death of Philip the Fair.
 7. Write the life of Raymond of Toulouse; and give some account of the Albigensian heresy.
 8. State what you know respecting the Pragmatic Sanction and explain the characteristic relations of the Gallican Church to the see of Rome.
 9. Describe the organization and character of the University of Paris, and account for the influence it exerted in the thirteenth century.
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TUESDAY, June 2, 1885. 1½—4½.

HISTORY OF ROME B.C. 202—B.C. 31.

Not more than nine questions are to be attempted.

1. WHAT were the causes of the wars undertaken by the Romans between 202 B.C. and 168 B.C. against Macedonia and against Antiochus? What was the effect of those wars on the political condition of Greece and Asia Minor?

2. What were, at the beginning of the period, the constitutional functions of the Consuls, Prætors, Tribunes, Comitia? In what ways could a citizen at that time become a senator?

3. What were the effects on the Roman Constitution in the seventy years after the Hannibalic war

(a) of the conquests made by Rome outside Italy;

(b) of the extension of the citizenship to communities remote from Rome?

4. Write a short account of the doings of Scipio Æmilianus in Spain and Africa.

5. Describe the changes introduced by Tiberius Gracchus. Were any of his proceedings unconstitutional?

6. Compare the policy of Caius Gracchus with that of Cæsar, and account for the failure of the former.

7. "The restoration (after the fall of Caius Gracchus) governed with the desires and opinions of a legitimate aristocracy and with the constitution and means of government of a *tyrannis*."—MOMMSEN.

Comment on this.

8. Characterize the legislation of Sulla. When and how did the Senate lose the control of the Republic which he had given it?

9. Write an account of the relations between the Roman government and the Jews during the period.

10. What circumstances suggested the compact between Cæsar, Pompeius and Crassus in 60 B.C.? What were the terms of it? What further arrangements were made at the Conference of Luca?

11. Trace the history of the rupture between Pompeius and Cæsar from the death of Crassus to the crossing of the Rubicon.

12. Estimate the wisdom of Cicero's political aims after the death of Cæsar.

WEDNESDAY, *June 3*, 1885. 9—1.

WRITE an essay on *one* of the following subjects :

1. Caius Julius Cæsar : his place in history.
 2. The orders of knighthood founded in connexion with the Crusades : the causes of their greatness and of their decay.
 3. The political theory of the balance of power.
 4. Congresses : their use and abuse as illustrated by European history.
 5. The uses of a second chamber of legislation.
 6. The dictum "Trade follows the flag."
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THURSDAY, June 4, 1885. 9—12.

GENERAL ENGLISH HISTORY.

Not more than nine questions are to be attempted.

I. WRITE a life of St Dunstan, distinguishing the legendary elements, and estimate his character and aims.

II. Point out the effects of the Norman Conquest on (1) the ecclesiastical institutions, (2) the social life of England.

III. Give an outline of events in the four years following upon the flight of Ethelred from England, and point out their importance in relation to subsequent history.

IV. Summarize the events of the last ten years of the reign of Edward III. What questions, at home and abroad, were then mainly occupying the attention of the nation?

V. Give some account of the family of the Nevilles, and describe their policy in the reign of Edward IV.

VI. Describe the policy and career of the Protector Somerset.

VII. What were the circumstances and events that more immediately favoured the Restoration?

VIII. Explain the several influences which determined England's foreign policy in the reign of Charles II.

IX. What were the circumstances which brought about, and what the obstacles which threatened to prevent, the union of the kingdoms of England and Scotland?

X. What conditions more especially favoured the designs of Charles Edward in Scotland? Give some account of the insurrection of 1745.

XI. What were the circumstances out of which the war with the American colonies arose? On what grounds was its prosecution condemned or defended by the English statesmen of the time?

XII. What were the chief questions before the country and what were the relations of political parties at the time of Canning's appointment as Prime Minister?

THURSDAY, June 4, 1885. 1½—4½.

PRINCIPLES OF POLITICAL PHILOSOPHY AND OF GENERAL
JURISPRUDENCE.

Not more than eight of these questions are to be attempted.

1. WHAT was the nature of the Patria Potestas among the Romans? Estimate briefly the evidence for the existence of something like the Patria Potestas among other Aryan peoples.

2. What forces are most effective in combining disunited elements into a united people? Illustrate their action.

3. How do the Greek conception of a πόλις, the Roman conception of the Respublica and the modern conception of a State differ from one another? What have they in common?

4. Examine the various agencies by which law is formed. Illustrate from the history of Roman law and English law.

5. "The penal law of ancient communities is not the law of Crimes; it is the law of Wrongs, or, to use the English technical word, of Torts." Sir H. J. S. Maine.

Explain this with illustrations from any ancient collection of laws. How did a law of Crimes properly so called arise (1) at Rome, (2) in England?

6. What were the earliest forms of Testament at Rome and in what respects did they differ from the later forms?

7. State and criticise Austin's definition of the word *law*.

8. What are the dangers or weaknesses to which a community with democratic representative institutions is most commonly exposed?

9. Within what limits should the action of a representative assembly in your opinion be confined?

10. What do you deem to be the criterion of a good form of government?

11. State Aristotle's classification of Politics. How far is it applicable to modern governments?

12. Discuss the proposition That the power of a monarch properly so called, or the power of a sovereign number in its collegiate and sovereign capacity, is incapable of *legal* limitation.

FRIDAY, June 5, 1885. 9—12.

POLITICAL ECONOMY AND ECONOMIC HISTORY.

Not more than four questions out of the first six are to be attempted, nor more than four out of the last six.

1. DEFINE Economic History and examine its relation to Economic Science.
2. Montesquieu said, "Si les riches ne dépensent pas beaucoup, les pauvres mourront de faim." Comment on this statement.
3. Explain what is meant by saying that rent does not enter into cost of production.
4. What causes determine the value of (a) a cotton shirt, (b) a picture by Raphael, (c) a sheep, (d) the day's work of a bricklayer?
5. A statesman desirous of raising money deliberates whether he shall effect the object
 - (a) By a land tax;
 - (b) By an ungraduated income tax;
 - (c) By a graduated income tax;
 - (d) By duties on imported food products;
 - (e) By duties on imported manufactured products.

What economic considerations might move him for or against each of these courses?

6. Examine the advantages and disadvantages of joint stock companies as competitors with private enterprise. To what extent, in your opinion, should the State control the formation and action of such companies?
7. "Latifundia perdidere Italiam." Examine this statement; and compare the agrarian questions arising in ancient Rome and in modern England.
8. Describe the economic condition of England at the date of the "Black Death," and examine the effects of the depopulation caused thereby.
9. Trace the history of the English Poor Laws.
10. To what extent is it true that the Revolution created peasant proprietorship in France?
11. Give an account of the circumstances under which Trades Unions arose in England. Examine their effects on the public welfare.
12. What countries have been from time to time in the history of modern Europe the chief seats of the ship-building and carrying trades? Explain, in each case, the causes which have determined the migrations of these industries.

FRIDAY, June 5, 1885. 1½—4½.

PUBLIC INTERNATIONAL LAW IN CONNEXION WITH SELECTED
TREATIES (1763—1802).

Not more than nine questions are to be attempted.

1. GIVE instances of differences between nations concerning international law which have lasted into the 18th or 19th centuries. In what directions may the range of international law be expected to expand?
2. Discuss and illustrate the proposition: "International law protects only such states as retain vitality." What is meant by the denationalisation of a state?
3. Examine the conditions under which the right of acquiring territory may be founded (a) upon discovery, (b) upon settlement. Sketch the history of the conflict as to boundaries brought to a close by the treaties of San Ildefonso and the Prado.
4. What is meant by a treaty of guaranty, and for what ends have such treaties usually been concluded? Give some account of the treaty of Teschen.
5. Define contraband of war, adding some account of the origin and history of the term. How did the question of contraband affect the relations between Great Britain and the United Provinces before the rupture of 1780?
6. What projects and policy was the *Fürstenbund* of 1785 intended to thwart? Examine the character and historical significance of this league, and mention any analogies to it in the previous history of the Empire.
7. Illustrate from American or other constitutional history the difference between sovereignty and independence of states.
8. In what measure was the outbreak of war between Great Britain and France in 1792 brought about by the question of the Schelde? Cite any other modern instances of conflicts concerning freedom of intercourse by means of rivers, and show what principles have been at issue.
9. Briefly describe the circumstances of the Second Partition of Poland, and shew how far "the inveterate and mutually well-grounded jealousy of the German Powers" contributed to the result.
10. Under what political circumstances, and with what objects, were the Armed Neutrality of 1780 and that of 1800 respectively declared? Review the history of the relations between Great Britain and Denmark in the year 1801.
11. "*Il faut dépayser l'Allemagne.*" Show to what extent this principle of policy was carried out in the Peace of Lunéville.
12. (a) Explain the terms right of reputation; eminent domain; retorsion.
(b) What was meant by the *privilegium de non appellando*; the *Joyeuse Entrée*; the *gabelle d'émigration*?
(c) What were the Dunkirk Commissioners, the Cisalpine Republic, the *Reichsdeputationshauptschluss* of 1803?
(d) Date the Congress of Reichenbach, the Peace of Basel, the end of Venetian independence.

WHEWELL SCHOLARSHIPS.

SATURDAY, *June* 6, 1885. 9—12.

INTERNATIONAL LAW.

1. ENUMERATE the sources of International Law, and discuss their relative importance.
2. Give an historical account of the efforts made by Great Britain for the suppression of the Slave Trade from 1815 to the present time.
3. The British Extradition Act of 1870 provides that "a fugitive criminal shall not be surrendered if the offence in respect of which his surrender is demanded is one of a political character." How would you distinguish offences of a political character from offences in respect of which surrender may be made?
4. Under what jurisdiction does each of the following offences come?
 - (a) A seaman from a British vessel of war lying in a foreign port commits an assault in the streets of the town.
 - (b) A British seaman, escaping in a boat on the Pacific from a burning British vessel, quarrels with another member of the crew and kills him.
 - (c) Under similar circumstances of shipwreck the officer in command of the boat refuses to land on a coral island for the purpose of attacking the natives, and taking possession of the spot. The crew, therefore, throw off his authority, pinion him, and then proceed to carry out their plan.
5. What is meant by Ratification? Are States under an obligation to ratify the treaties into which they have entered?
6. A State bombards some of the ports of another State, blockades a portion of its coast, and endeavours to take possession of a few of its fortified places, while at the same time it contends that it is not at war, and continues negotiations with the State it is attacking. Examine the validity of the contention, and discuss the proper course for other powers to take with regard to such hostilities.
7. Does the position which the Great Powers of Europe have occupied since 1814 necessitate in your judgment any modification in the received doctrine of the Equality of all Independent States before the law?
8. Discuss the question whether the Declaration of Paris is binding on a power which has signed it in a war with a power which has not signed it.
9. A foreign ironclad is in a British port when the State to which it belongs is involved in war with a third power. Shew to what extent the enforcement of the Foreign Enlistment Act renders unlawful proceedings on its part which would previously have been allowable.
10. Under what circumstances is devastation of territory justifiable in warfare?

SATURDAY, June 6, 1885. 1—4.

INTERNATIONAL LAW.

[Not more than FIVE questions are to be attempted.]

1. DISCUSS the statements contained in any one of the following quotations:

"And here, Sir, I may be permitted to express my surprise that the honourable and learned gentleman.....should have spoken so slightly of the Law of Nations, as if, instead of being a code matured by the wisdom and experience of ages, it was, as he would have us believe, only a bundle of medley maxims got together by chance and expediency."

LORD BEACONSFIELD.

"I do not intend to disparage Intervention. It is a high and summary procedure which may sometimes snatch a remedy beyond the reach of law. Nevertheless, it must be admitted that in the case of Intervention, as in that of Revolution, its essence is illegality, and its justification is its success. Of all things, at once the most unjustifiable and the most impolitic is an unsuccessful Intervention."

SIR WILLIAM HARCOURT.

"The visit which the cruisers of belligerent powers exercise with respect to vessels which they meet at sea, is not founded upon the Natural Law of Nations, but only on the Conventional Law of Nations; and it cannot, consequently, be extended beyond the limits fixed for it by treaties."

SCHLEGEL.

2. Answer the three following enquiries on the supposition that Great Britain is at war with Russia, the other powers of Europe being neutral.

(a) May the British fleet attack the Black Sea ports of Russia?

(b) May Germany, Denmark and Sweden declare the Baltic a neutral sea, and prohibit hostilities in it?

(c) May the British Government institute a blockade of the Sound and the two Belts?

3. Endeavour to estimate the effect of commercial considerations in modifying International Law during the last half century.

4. Discuss to what extent the doctrine of Continuous Voyages applies to Blockade; and illustrate your arguments by the case of the *Springbok*.

5. If you were put in command of a squadron with orders to cruise along the enemy's coast, and do as much damage as the laws of war allow, how would you treat (a) a fortified naval port, (b) an open commercial town, (c) a fleet of fishing boats found engaged in their usual avocation within three miles of the shore?

6. What is necessary in order that a State may acquire a valid title to territory by Occupation? Point out how, and to what extent, the decisions of the recent West African Conference affect this subject.

7. Write a brief history of the controversy between Great Britain and the United States with regard to the Recognition by the former of the Belligerency of the Southern Confederacy in the great American civil war; and deduce therefrom the true principles of International Law applicable to Recognition of Belligerency.

8. Give the various tests of contraband character which have been adopted by British Prize Courts; and discuss the circumstances under which provisions may lawfully be captured as contraband of war.

MONDAY, *June* 8, 1885 9—12.

MORAL AND POLITICAL PHILOSOPHY.

i. DEFINE the terms "Morality", "Positive Morality". By what method and with what degree of accuracy can positive morality be known? Discuss the current distinction between Constitutional Law and Constitutional Morality.

ii. Examine the relation of Justice to Law.

To what extent, and on what grounds, does Justice require (1) that an individual should conform to unjust laws, and (2) that a community should give compensation to individuals whose pecuniary interests are injured by the abolition of unjust laws?

iii. Discuss the question whether Punishment should be Retributive or Preventive; and examine its practical importance.

Examine the following statement:

"The benefits which criminal law produces are two-fold. In the first place, "it prevents crime by terror; in the second place it regulates, sanctions, and provides "a legitimate satisfaction for the passion of revenge."

Compare this view with that of Butler or Bentham.

iv. Discuss the principles on which the right of private property is based, and apply them in examining the grounds of the following current opinion:

That foreign publishers are morally wrong in reprinting and selling English books, without remunerating those who own the copyright of the books, during the period of copyright determined by English law: but that English publishers are not morally wrong in reprinting such books and appropriating the whole profits of their sale, after the period of copyright has expired.

5. Est et tertia iuris significatio quae idem ualet quod lex, quoties uox legis largissime sumitur, ut sit regula actuum moralium obligans ad id quod rectum est.

Translate and discuss this definition, pointing out the connexion between this meaning of *ius* and the other two meanings recognized by Grotius, or their influence upon it.

6. Inter prima naturae nihil est quod bello repugnet, immo omnia potius ei fauent.
GROTIUS.

Hereby it is manifest that, during the time men live without a common power to keep them all in awe, they are in that condition which is called War.
HOBBS.

Examine the apparent similarity of these conclusions and shew how they follow from very different first principles.

7. Grotius' scheme does however explain the relation of the Emperor of Germany, the Kings of the Romans, and the Pope; and thus makes a jural transition from the ancient to the modern world.
WHEWELL.

What is the theory referred to, and how does the subject arise in the treatise *De iure belli et pacis*?

8. Sciendum quoque est reges, et qui par regibus ius obtinent, ius habere poenas poscendi, non tantum ob iniurias in se aut subditos suos commissas, sed et ob eas quae ipsos peculiariter non tangunt, sed in quibusvis personis ius naturae aut gentium immaniter violant.
GROTIUS [*de Jure* 2. 20. 40. 1].

Translate this passage and discuss the principle involved, adducing any modern instances in which it has apparently been acted upon.

9. Enumerate the topics treated in Grotius' third book of the treatise *De iure belli et pacis*, particularly those which continue to be of importance at the present time.

June 8, 1885. 1—4.

WRITE an Essay on one only of the following subjects:

1. Arbitration as a mode of settling international disputes.
 2. The advantages and disadvantages of the rule that neutral ships make neutral goods to a state possessing a large commercial navy, and great maritime power.
 3. Comparison between the two Mills, James and John Stuart.
 4. The personal and political character of Milton as evidenced by his prose writings.
 5. Colonial Federation, the extent to which it is feasible or expedient.
 6. The causes of the dissolution of the "Holy Roman Empire."
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SPECIAL EXAMINATION IN THEOLOGY FOR THE ORDINARY B.A. DEGREE.

FRIDAY, *June* 5, 1885. 9—12.

THE PASTORAL EPISTLES.

1. DISCUSS the date and authorship of these Epistles. What do we learn from the Second Epistle to Timothy of the writer's circumstances, and of the place to which it is addressed?

2. Describe the condition of Christianity in Crete implied in the Epistle to Titus.

3. What are the relations between purity of faith and moral consistency of life as laid down in these Epistles?

4. Give, with explanations, the substance of the precepts about widows in the First Epistle to Timothy.

5. Translate, commenting on the words and phrases between asterisks:

(a) τοῦτο καλὸν καὶ ἀπόδεκτον ἐνώπιον τοῦ σωτῆρος ἡμῶν θεοῦ, *ὃς πάντας ἀνθρώπους θέλει σωθῆναι καὶ εἰς ἐπίγνωσιν ἀληθείας ἐλθεῖν*.· Εἰς γὰρ θεός, εἰς καὶ *μεσίτης* θεοῦ καὶ ἀνθρώπων ἄνθρωπος Χριστὸς Ἰησοῦς, ὁ δὸς ἑαυτὸν *ἀντίλυτρον* ὑπὲρ πάντων, †τὸ μαρτύριον καιροῖς ἰδίοις†· εἰς ὃ ἐτέθην ἐγὼ κῆρυξ καὶ ἀπόστολος.—*ἀλήθειαν λέγω, οὐ ψεύδομαι*,—διδάσκαλος ἐθνῶν ἐν πίστει καὶ ἀληθείᾳ.

Explain the connexion of εἰς γὰρ θεός, κ.τ.λ. with the preceding verse: and explain the construction of the clause between †...†.

(b) ταῦτα δίδασκε καὶ παρακάλει, εἴ τις ἑτεροδιδασκαλεῖ καὶ μὴ προσέρχεται ὑγιαίνουσι λόγοις, τοῖς τοῦ κυρίου ἡμῶν Ἰησοῦ Χριστοῦ, καὶ τῇ κατ' εὐσέβειαν διδασκαλίᾳ, τετύφωται, μηδὲν ἐπιστάμενος, ἀλλὰ νοσῶν περὶ ζητήσεις καὶ λογομαχίας, ἐξ ὧν γίνεται φθόνος, ἔρις, βλασφημίαι, ὑπόνοιαι πονηραί, διαπατριβαὶ διεφθαρμένων ἀνθρώπων τὸν νοῦν καὶ ἀπεστερημένων τῆς ἀληθείας, νομιζόντων πορισμὸν εἶναι τὴν εὐσέβειαν. ἔστιν δὲ πορισμὸς μέγας ἢ εὐσέβεια μετὰ αὐταρκειᾶς· οὐδὲν γὰρ εἰσηνέγκαμεν εἰς τὸν κόσμον, ὅτι οὐδὲ ἐξενεγκεῖν τι δυνάμεθα· ἔχοντες δὲ διατροφὰς καὶ σκεπάσματα, τούτοις ἀρκεσθυσόμεθα.

Comment on any words or phrases in this passage which are found only in these Epistles, or are used in them in a peculiar sense.

(c) ἀλλ' οὐ προκόψουσιν ἐπὶ πλεῖον, ἡ γὰρ ἄνοια αὐτῶν ἐκδηλος ἔσται πᾶσιν, ὡς καὶ ἡ ἐκείνων ἐγένετο. Σὺ δὲ παρηκολούθησάς μου τῇ διδασκαλίᾳ, τῇ *ἀγωγῇ*, τῇ προθέσει, τῇ πίστει, τῇ μακροθυμίᾳ, τῇ ἀγάπῃ, τῇ ὑπομονῇ, τοῖς διωγμοῖς, τοῖς παθήμασιν, οἷά μοι ἐγένετο ἐν Ἀντιοχείᾳ, ἐν Ἰκονίῃ, ἐν Λύστροις, οἷους διωγμοὺς ὑπήνεγκα· καὶ ἐκ πάντων με ἐρύσατο ὁ κύριος. καὶ πάντες δὲ οἱ θέλοντες ζῆν εὐσεβῶς ἐν Χριστῷ Ἰησοῦ διωχθήσονται· πονηροὶ δὲ ἄνθρωποι καὶ *γόητες* προκόψουσιν ἐπὶ τὸ χεῖρον, πλανῶντες καὶ πλανώμενοι.

Explain the apparent contradiction between the first and last verses of this passage. What is known from other sources of the sufferings here alluded to?

(d) ἐπεφάνη γὰρ ἡ χάρις τοῦ θεοῦ *σωτήριος* πᾶσιν ἀνθρώποις παιδεύουσα ἡμᾶς, ἵνα ἀρνησάμενοι τὴν ἀσέβειαν καὶ τὰς *κοσμικὰς* ἐπιθυμίας *σωφρόνως καὶ δικαίως καὶ εὐσεβῶς* ζῶμεν ἐν τῷ νῦν *αἰῶνι*, προσδεχόμενοι τὴν μακαρίαν ἐλπίδα καὶ ἐπιφάνειαν τῆς δόξης τοῦ μεγάλου θεοῦ καὶ σωτῆρος ἡμῶν Χριστοῦ Ἰησοῦ, ὃς ἔδωκεν ἑαυτὸν ὑπὲρ ἡμῶν ἵνα λυτρώσῃται ἡμᾶς ἀπὸ πάσης ἀνομίας καὶ καθαρῶς ἑαυτῷ λαὸν *περιούσιον*, ζῆλωτὴν καλῶν ἔργων. Ταῦτα λάλει καὶ παρακάλει καὶ ἔλεγχε μετὰ πάσης ἐπιταγῆς· *μηδεὶς σου περιφρονεῖτω*.

Show clearly the construction of ἵνα ἀρνησάμενοι κ.τ.λ. Explain the allusions to the Old Testament.

6. Translate and explain the meaning of the following passages, giving the substance of the context in each case.

(a) οἶδαμεν δὲ ὅτι καλὸς ὁ νόμος ἐάν τις αὐτῷ νομίμως χρῆται, εἰδὼς τοῦτο ὅτι δικαίῳ νόμῳ οὐ κείται, ἀνόμοις δὲ καὶ ἀνυποτάκτοις, ἀσεβέσι καὶ ἀμαρτωλοῖς, ἀνοσίοις καὶ βεβήλοις.

(b) χεῖρας ταχέως μηδενὶ ἐπιτίθει, μηδὲ κοινώνει ἀμαρτίαις ἀλλοτρίαις· σεαυτὸν ἀγνὸν τήρει.

(c) τὸν κοπιῶντα γεωργὸν δεῖ πρῶτον τῶν καρπῶν μεταλαμβάνειν.

(d) μαθητεύσαντες δὲ καὶ οἱ ἡμέτεροι καλῶν ἔργων προϊστασθαι εἰς τὰς ἀναγκαίας χρεῖας, ἵνα μὴ ᾧσιν ἄκαρτοι.

7. Explain:

καὶ Ἀδὰμ οὐκ ἠπατήθη, ἡ δὲ γυνὴ ἐξαπατηθεῖσα ἐν παραβάσει γέγονεν.

Discuss the use of Old Testament quotations in these Epistles.

8. Comment on the grammatical structure of the following passages, noticing any important variations in MS. readings.

(a) καὶ ὁμολογουμένως μέγα ἐστὶν τὸ τῆς εὐσεβείας μυστήριον·

*Ὁς ἐφανερώθη ἐν σαρκί.

(b) ῥίζα γὰρ πάντων τῶν κακῶν ἐστὶν ἡ φιλαργυρία, ἧς τινὲς ὀρεγόμενοι ἀπεπλανήθησαν ἀπὸ τῆς πίστεως καὶ ἑαυτοὺς περιέπειραν ὀδύναις πολλαῖς.

(c) καὶ ἃ ἤκουσας παρ' ἐμοῦ διὰ πολλῶν μαρτύρων, ταῦτα παράθου πιστοῖς ἀνθρώποις, οἵτινες ἱκανοὶ ἔσονται καὶ ἐτέρους διδάξαι.

(d) διαμαρτύρομαι ἐνώπιον τοῦ θεοῦ καὶ Χριστοῦ Ἰησοῦ, τοῦ μέλλοντος κρίνειν ζῶντας καὶ νεκρούς, καὶ τὴν ἐπιφάνειαν αὐτοῦ καὶ τὴν βασιλείαν αὐτοῦ.

(e) Παῦλος δούλος θεοῦ, ἀπόστολος δὲ Ἰησοῦ Χριστοῦ κατὰ πίστιν ἐκλεκτῶν θεοῦ καὶ ἐπίγνωσιν ἀληθείας τῆς κατ' εὐσέβειαν ἐπ' ἐλπίδι ζωῆς αἰωνίου.....

9. Write notes on the following words and phrases, *αἰρετικός*, *γάγγραινα*, *ἐκλεκτοί*, *θεμέλιον*, *ὀρθοτομεῖν*, *παραθήκη*, *παραδιδόναι τῷ Σατανᾷ*; and distinguish between *μακροθυμία*, *πραῦπάθεια*: *ἀνέχεσθαι*, *ὑπομένειν*.

10. Retranslate into GREEK:

(a) But the end of the charge is love out of a pure heart and a good conscience and faith unfeigned.

(b) Now in a great house there are not only vessels of gold and of silver, but also of wood and of earth; and some unto honour, and some unto dishonour.

(c) This testimony is true. For which cause reprove them sharply, that they may be sound in the faith, not giving heed to Jewish fables, and commandments of men who turn away from the truth.

FRIDAY, June 5, 1885. 1—4.

(A)

1 KINGS XII. TO END OF 2 KINGS.

1. EXPLAIN briefly the allusions contained in the words italicised in the following passages:

(a) 1 Kings xv. 4 "Nevertheless for David's sake did the Lord his God give *him* a lamp in Jerusalem, to set up *his* son after him, and to establish Jerusalem."

(b) 1 K. xv. 23 "Nevertheless in the time of *his* old age *he* was diseased in his feet."

(c) 1 K. xvi. 24 "And *he* bought the hill Samaria of Shemer for two talents of silver."

(d) 1 K. xx. 32 "Is *he* yet alive? he is *my* brother."

(e) 1 K. xxi. 28 "Because *he* humbleth himself before me, I will not bring the evil in his days."

(f) 2 K. iii. 27 "Then *he* took his eldest son, that should have reigned in his stead, and offered him for a burnt offering upon the wall."

(g) 2 K. x. 30 "*Thy* children of the fourth generation shall sit on the throne of Israel."

(h) 2 K. xiii. 5 "And the Lord gave Israel a *Saviour*."

(i) 2 K. xiv. 10 "*Thou* hast indeed smitten Edom; and *thine* heart hath lifted thee up; glory of this, and tarry at home."

(k) 2 K. xv. 5 "And the Lord smote *the king*, so that he was a leper."

(l) 2 K. xvii. 29 "Howbeit *every nation* made gods of their own."

(m) 2 K. xxii. 11 "And it came to pass when *the king* had heard the words of the book of the law, that he rent his clothes."

(n) 2 K. xxiv. 7 "For the *king of Babylon* had taken from the river of Egypt unto the river Euphrates all that pertained to the king of Egypt."

2. What do you know of the following :

Jehu the prophet, Tibni the son of Ginath, Hiel the Bethelite, Jehonadab the son of Rechab, Urijah the priest, Tirhakah, Gedaliah the son of Ahikam, Ethbaal, Zedekiah the son of Chenaanah, Pul ?

3. During what reigns and under what circumstances does the kingdom of Judah come into contact with the kingdom of Egypt ?

How does Rabshakeh describe an Egyptian alliance ?

4. State briefly the context in which the following passages occur :

(a) 1 K. xii. 24 "For this thing is from me."

(b) 1 K. xiii. 2 "Behold, a child shall be born unto the house of David."

(c) 1 K. xviii. 11 "I, thy servant, fear the Lord from my youth."

(d) 1 K. xx. 1 "Let not him that girdeth on his harness boast himself as he that putteth it off."

(e) 1 K. xxii. 19 "I saw the Lord sitting on his throne."

(f) 2 K. i. 13 "Therefore let my life now be precious in thy sight."

(g) 2 K. v. 15 "Behold, now I know that there is no God in all the earth, but in Israel."

(h) 2 K. vi. 16 "They that be with us are more than they that be with them."

(i) 2 K. vii. 9 "This day is a day of good tidings, and we hold our peace."

(k) 2 K. xvi. 7 "I am thy servant and thy son; come up and save me."

(l) 2 K. xx. 19 "Is it not good, if peace and truth be in my days?"

(m) 2 K. xxv. 2 "And all the people both small and great and the captains of the armies arose, and came to Egypt."

5. Comment on

(a) "My father, my father, the chariot of Israel and the horsemen thereof."

(b) "And he brought forth the king's son and put the crown upon him and gave him the testimony."

(c) "Had Zimri peace who slew his master?"

(d) "Speak, I pray thee, to thy servants in the Syrian language."

(B)

PSALMS XLII.—LXXII.

1. How is the Psalter divided? Describe generally the character of the superscriptions of Psalms xlii.—lxxii., and compare them with those of the rest of the Psalter.

2. Comment on and explain carefully, giving a paraphrase to indicate the connection of the following verses :

Wherefore should I fear in the days of evil, when the iniquity of my heels shall compass me about? They that trust in their wealth, and boast themselves in the multitude of their riches; none of them can by any means redeem his brother, nor give to God a ransom for him: (for the redemption of their soul is precious, and it ceaseth for ever:) that he should still live for ever, and not see corruption. For he seeth that wise men die, likewise the fool and the brutish person perish, and leave their wealth to others. Their inward thought is, that their houses shall continue for ever, and their dwelling places to all generations; they call their lands after their own names. Nevertheless man being in honour abideth not: he is like the beasts that perish. xlix. 5—12.

How is the question in the above extract answered in the remaining portion of this Psalm?

3. Give an analysis of Psalm lxviii. (Let God arise and let his enemies be scattered).

4. Give a description of any one Psalm in this book (except Psa. xlix. and lxviii.), quoting as much of it as you can remember, and commenting on it generally.

5. Explain the meaning of the following, and give the context:

The king's daughter is all glorious within—The excellency of Jacob—Uphold me with thy free spirit—Because they have no changes, therefore they fear not God—The outgoings of the morning and evening—Prayer also shall be made for him continually.

6. Comment carefully on the following, and suggest any alternative renderings:

How thou didst drive out the heathen with thy hand, and plantedst them; how thou didst afflict the people, and cast them out. xliv. 2.

The princes of the people are gathered together, even the people of the God of Abraham: for the shields of the earth belong unto God: he is greatly exalted. xlvii. 9.

Before your pots can feel the thorns, he shall take them away as with a whirlwind, both living, and in his wrath. lviii. 9.

7. What references are made in these Psalms to

- (1) the history of Israel,
- (2) acts of public worship,
- (3) the surrounding nations?

SATURDAY, June 6, 1885. 9—12.

ENGLISH CHURCH HISTORY.

[Not more than ~~two~~ questions are to be attempted in each of (A) I.—IV., and not more than *five* in (B).]

(A). OUTLINES OF ENGLISH CHURCH HISTORY.

I. 1. DESCRIBE the condition of the Anglo-Saxon Church with reference to (1) its relations with the civil power, (2) its monastic institutions, (3) its internal organization.

2. State clearly the points at issue in the controversy about Investitures, and the manner in which the controversy was settled in England.

3. Describe generally the Scholastic Philosophy, and name the most eminent English Schoolmen. Trace the influence of this Philosophy in later times.

II. 1. Indicate the causes which led to the Revival of Learning, and compare the character of the movement in England with that which it assumed on the Continent.

2. Give the substance of the enactments of Henry VIII.'s reign which settled (1) the relation of the English Church to the Pope, (2) its own organization.

3. Compare the two Prayer Books put forth during Edward VI.'s reign with one another, and with the present Prayer Book, and compare the Articles of that reign with those now existing.

III. 1. Describe the character of the settlement of the Church under Elizabeth, and estimate the effect of her whole reign on ecclesiastical affairs in England.

2. Trace the ecclesiastical policy pursued from the commencement of the Long Parliament to the Restoration.

3. Give some account of Hooker's *Ecclesiastical Polity* and estimate his position with reference to the divines of the two succeeding reigns.

IV. 1. What penalties were enforced by Statute during the reign of Charles II. against those who did not conform to the Established Church? How and when were these Statutes subsequently modified, or repealed?

2. Sketch the main features of Wesley's movement, and compare it with earlier movements of a similar character.

3. Mention the principal English Divines of the 18th century, and give some account of their chief works and the controversies in which they were engaged.

(B). THE LIFE AND TIMES OF WYCLIF.

1. Describe the feeling in England with regard to the English Church and the Papacy in the 14th century. Point out the events which took place in Europe during this period which have a bearing on English Church History.

2. What is known for certain about Wyclif's residence at Oxford?

3. Give an account of the proceedings with reference to the Wardenship of Canterbury Hall, and discuss the question of the identity of the Warden with the Reformer.

4. "During the last two years of Edward III's reign, there is a strange collision and confusion of religious and political interests." Illustrate this statement, and point out Wyclif's share in the events of that period.

5. Describe Wyclif's work in translating the Bible. To what extent had the Bible been previously translated in England?

6. Trace the effect of the "Peasants' Revolt" upon (1) the Church, (2) Wyclif's position, (3) his followers.

7. Write short articles on:

Bradwardine, Bishop Spencer, Repyngdon, The Synod of the Earthquake.

SATURDAY, June 6, 1885. 1—4.

THE GOSPEL ACCORDING TO ST LUKE.

1. WHAT evidence can you adduce from the New Testament to prove that St Luke was (a) a Gentile (b) a Physician?

2. It has been said that the friendship which existed between St Paul and St Luke is reflected in the similarity of their phraseology, style and thought. How far does St Luke's Gospel support such a statement?

3. Show from the Preface to the Gospel the purpose which the writer has in view.

Mention any details in St Luke's Gospel, which seem to have been derived from an eye-witness.

4. Collect the incidents of the Passion, Crucifixion and Resurrection, which St Luke's Gospel alone records.

5. Describe the circumstances which were the occasion for the following parables:

Dives and Lazarus, the Fig-tree, the Lost Sheep, the Pharisee and the Publican, the Good Samaritan, the Vineyard, the Two Debtors, the Unjust Steward.

6. Translate the following passages, giving the context and adding *brief* explanatory notes:

(a) καὶ σοῦ αὐτῆς τὴν ψυχὴν διελύσεται ῥομφαία, ὅπως ἂν ἀποκαλυφθῶσιν ἐκ πολλῶν καρδιῶν διαλογισμοί.

(b) ὁ δὲ εἶπεν πρὸς αὐτούς Μηδὲν πλέον παρὰ τὸ διατεταγμένον ὑμῖν πράσσετε.

(c) οὐκ ἔστιν μαθητὴς ὑπὲρ τὸν διδάσκαλον, κατηρτισμένος δὲ πᾶς ἔσται ὡς ὁ διδάσκαλος αὐτοῦ.

(d) οὐ χάριν, λέγω σοι, ἀφένονται αἱ ἁμαρτίαι αὐτῆς αἱ πολλαί, ὅτι ἠγάπησεν πολὺ ᾧ δὲ ὀλίγον ἀφίεται, ὀλίγον ἀγαπᾷ.

(e) καὶ ἐν τῷ γενέσθαι τὴν φωνὴν εὐρέθη Ἰησοῦς μόνος. καὶ αὐτοὶ ἐσίγησαν καὶ οὐδενὶ ἀπήγγειλαν ἐν ἐκείναις ταῖς ἡμέραις οὐδὲν ὧν ἑώρακαν.

(f) οἱ δὲ ἠγνόουν τὸ ῥῆμα τοῦτο, καὶ ἦν παρακεκαλυμμένον ἀπ' αὐτῶν ἵνα μὴ αἰσθωνται αὐτό, καὶ ἐφοβοῦντο ἐρωτῆσαι αὐτὸν περὶ τοῦ ῥήματος τούτου.

(g) πλὴν ἐν τούτῳ μὴ χαίρετε ὅτι τὰ πνεύματα ὑμῖν ὑποτάσσεται, χαίρετε δὲ ὅτι τὰ ὀνόματα ὑμῶν ἐν γέγραπται ἐν τοῖς οὐρανοῖς.

(h) πλὴν τὰ ἐνόντα δότε ἐλεημοσύνην, καὶ ἰδοὺ πάντα καθαρὰ ὑμῖν ἐστίν.

(i) οὐχί, λέγω ὑμῖν, ἀλλ' εἰ μὴ μετανοήσητε πάντες ὡσαύτως ἀπολείσθε.

(k) οὐκ ἔρχεται ἡ βασιλεία τοῦ θεοῦ μετὰ παρατηρήσεως, οὐδὲ ἐροῦσιν Ἰδοὺ ὧδε ἢ Ἐκεῖ· ἰδοὺ γὰρ ἡ βασιλεία τοῦ θεοῦ ἐντὸς ὑμῶν ἐστίν.

(l) καὶ παρατηρήσαντες ἀπέστειλαν ἐγκαθέτους ὑποκρινομένους ἑαυτοὺς δικαίους εἶναι, ἵνα ἐπιλάβωνται αὐτοῦ λόγου, ὥστε παραδοῦναι αὐτὸν τῇ ἀρχῇ καὶ τῇ ἐξουσίᾳ τοῦ ἡγεμόνος.

(m) ὅτι εἰ ἐν ὑγρῷ ξύλῳ ταῦτα ποιοῦσιν, ἐν τῷ ξηρῷ τί γένηται;

(n) καὶ αὐτὸς εἶπεν πρὸς αὐτοὺς Ὡς ἀνόητοι καὶ βραδεῖς τῇ καρδίᾳ τοῦ πιστεύειν ἐπὶ πᾶσιν οἷς ἐλάλησαν οἱ προφῆται· οὐχὶ ταῦτα ἔδει παθεῖν τὸν χριστὸν καὶ εἰσελθεῖν εἰς τὴν δόξαν αὐτοῦ;

7. Give the meaning of the following words and phrases, illustrating their usage from St Luke's Gospel.

ἁλλογενής, ἄτοπος, ἀπογράφεσθαι, παράκλησις, περισπᾶσθαι, καταργεῖν, τόπος πεδινός, ἡ κλάσις τοῦ ἄρτου, συμβάλλειν, ἀνατολή ἐξ ὕψους, εὐθετος.

8. In the following renderings of the Revised Version explain the cause and nature of the variation from the Authorised Version, giving the original where possible:

(a) Wherefore also that which is to be born shall be called holy, the Son of God.

(b) And Jesus himself, when he began to teach, was about thirty years of age, being the son (as was supposed) of Joseph.

(c) But love your enemies, and do them good, and lend, never despairing.

(d) If any man would come after me, let him deny himself

(e) No man, when he hath lighted a lamp, putteth it in a cellar, neither under the bushel, but on the stand, that they which enter in may see the light.

(f) I fast twice in the week; I give tithes of all that I get.

(g) But that the dead are raised, even Moses shewed, in the place concerning the Bush.

(h) In your patience ye shall win your souls.

(i) And the cup in like manner after supper, saying, This cup is the new covenant in my blood, even that which is poured out for you.

9. What variations of reading occur in the following passages? examine their bearing upon the meaning in each case.

(a) δόξα ἐν ὑψίστοις θεῷ καὶ ἐπὶ γῆς εἰρήνη ἐν ἀνθρώποις εὐδοκίας.

(b) καὶ ἦν κηρύσσων εἰς τὰς συναγωγὰς τῆς Ἰουδαίας.

(c) ἐγένετο δὲ ἐν σαββάτῳ διαπορεύεσθαι αὐτὸν διὰ σπορίμων, καὶ ἔτιλλον οἱ μαθηταὶ αὐτοῦ καὶ ἤσθιον τοὺς στάχυνας ψάχοντες ταῖς χερσίν.

(d) τίνος ὑμῶν υἱὸς ἢ βοῦς εἰς φρέαρ πεσεῖται, καὶ οὐκ εὐθὺς ἀνασπάσει αὐτὸν ἐν ἡμέρᾳ τοῦ σαββάτου;

10. Either quote the passages in this Gospel, where our Lord appeals to the lives of Old Testament personages in support of His teaching,

or, quote our Lord's words with respect to (a) Prayer, (b) the Sabbath, (c) the Resurrection.

MONDAY, June 8, 1885. 9—12.

HEBREW. I KINGS XVII.—II KINGS VIII.

1. TRANSLATE:

(a) וַיִּקַּח אֱלֹהֵינוּ שְׁתֵּי עֶשְׂרֵה אַבְנִים כַּמֶּסֶפֶר שְׁבַע בְּנֵי-יַעֲקֹב אֲשֶׁר הָיָה
דְּבַר-יְהוָה אֵלָיו לֵאמֹר יִשְׂרָאֵל יְהִי שִׁמְךָ: וַיִּבְנֶה אֶת-הָאֲבָנִים מִזֶּבֶחַ בְּשֵׁם
יְהוָה וַיַּעַשׂ תְּעֹלָה בְּבֵית סְאִתִּים זָרַע סָבִיב לְמִזְבֵּחַ: וַיַּעֲרֹךְ אֶת-הַעֲצִים וַיִּנְתַּח
אֶת-הַפֶּר וַיִּשֶׂם עַל-הַעֲצִים: וַיֹּאמֶר מֶלֶךְ אֲרָבֶעָה כְּדִים מִים וַיִּצְקוּ עַל-הַתְּעֹלָה
וַעֲלֶה-עֲצִים וַיֹּאמֶר שְׁנֵי וַיִּשְׁנֵי וַיֹּאמֶר שְׁלֹשׁ וַיִּשְׁלֹשׁ: וַיֵּלְכוּ הַמֵּיִם סָבִיב לְמִזְבֵּחַ
וְגַם אֶת-הַתְּעֹלָה מִלְּאִמִּים:

Parse שְׁנֵי, וַיִּנְתַּח.

Comment on בְּבֵית סְאִתִּים זָרַע.

(b) וַעֲבַדִּי מֶלֶךְ-אֲדָם אֲמָרוּ אֵלָיו אֱלֹהֵי הָרִים אֱלֹהֵיהֶם עַל-בֶּן חֲזָקוֹ מִפְּנֵי
וְאֵלֶם נִלְחַם אִתָּם בְּמִישֹׁר אִם-לֹא נַחֲזֹק מֵהֶם: וְאֶת-הַדְּבַר הַזֶּה עָשָׂה הָסֵר
הַמַּלְכִּים אִישׁ מִמְּקוֹמוֹ וְשִׁים פְּחוֹת תַּחְתֵּיהֶם: וְאֵתָה תִּמְנָה-לָךְ חֵיל כַּחֵיל הַנֶּפֶל
מֵאוֹתָךְ וְסִיס-כַּסֹּם וְרֶכֶב כָּרֶכֶב וְנִלְחָמָה אוֹתָם בְּמִישֹׁר אִם-לֹא נַחֲזֹק מֵהֶם וַיִּשְׁמַע
לְקֹלָם וַיַּעַשׂ כֵּן: וַיְהִי לְתִשְׁבֹּת הַשָּׁנָה וַיִּפְקֹד בֶּן-הַדָּד אֶת-אֲדָם וַיַּעַל אֶפְרָה
לְמִלְחָמָה עִם-יִשְׂרָאֵל: וּבְנֵי יִשְׂרָאֵל הִתְּפַקְדוּ וַיִּכְלְכוּ וַיֵּלְכוּ לְקִרְאָתָם וַיַּחֲנוּ בְנֵי-
יִשְׂרָאֵל נֶגְדָם בְּשָׁנֵי חֲשָׁפֵי עֵזִים וְאֲדָם מֶלֶךְ אֶת-הָאָרֶץ:

Explain the construction of the clause וְאֵלֶם... מֵהֶם in the first verse.

Parse וַיַּחֲנוּ, וַיִּכְלְכוּ, וְנִלְחָמָה.

Mention some of the meanings attached to the root of הִתְּפַקְדוּ occurring in these chapters.

(c) וַיֹּאמֶר מֶלֶךְ יִשְׂרָאֵל אֶל־יְהוֹשָׁפָט הִתְחַפֵּשׂ וְבֹא בַּמִּלְחָמָה וְאַתָּה לִבֵּשׁ בְּגָדֶיךָ וַיִּתְחַפֵּשׂ מֶלֶךְ יִשְׂרָאֵל וַיָּבֹא בַּמִּלְחָמָה : וּמֶלֶךְ אֲדָם צִוָּה אֶת־שָׂרֵי הָרֶכֶב אֲשֶׁר־לוֹ שְׁלֹשִׁים וּשְׁנַיִם לֵאמֹר לֹא תִלָּחֲמוּ אֶת־קִטָּן וְאֶת־גָּדוֹל כִּי אִם־אֶת־מֶלֶךְ יִשְׂרָאֵל לְבַדּוֹ : וַיְהִי כִּרְאוֹת שָׂרֵי הָרֶכֶב אֶת־יְהוֹשָׁפָט וְהָמָּה אָמְרוּ אֶךְ מֶלֶךְ־יִשְׂרָאֵל הוּא וַיִּסְרוּ עָלָיו לְהִלָּחֵם וַיִּזְעַק יְהוֹשָׁפָט : וַיְהִי כִּרְאוֹת שָׂרֵי הָרֶכֶב כִּי־לֹא־מֶלֶךְ יִשְׂרָאֵל הוּא וַיִּשׁוּבוּ מֵאַחֲרָיו : וְאִישׁ מִשָּׁד בִּקְשָׁתָהּ לְתַמּוֹ וַיָּבֵה אֶת־מֶלֶךְ יִשְׂרָאֵל בֵּין הַדְּבָקִים וּבֵין הַשָּׁרִיטִין וַיֹּאמֶר לְרַכְּבוֹ הִפֹּךְ יָרִיד וְהוֹצִיאֲנִי מִן־הַמַּחֲנֶה כִּי הִחֲלִיתִי :

• יתיר •

Explain the construction of וַיִּתְחַפֵּשׂ. Comment on any difficulties in the last verse.

Parse וְהוֹצִיאֲנִי, כִּרְאוֹת, לְבַדּוֹ.

(d) לְדַבֵּר הָזֶה יִסְלַח יְהוָה לְעַבְדְּךָ כִּבּוֹא אֲדָנִי בֵּית־דַּמּוֹן לְהַשְׁתַּחֲוֹת שָׁמָּה וְהוּא נִשְׁעָן עַל־יָדָיו וְהַשְׁתַּחֲוִיתִי בֵּית רַמֵּן בְּהַשְׁתַּחֲוִיתִי בֵּית רַמֵּן יִסְלַח־נָא יְהוָה לְעַבְדְּךָ כִּדְבַר הָזֶה : וַיֹּאמֶר לוֹ לֵךְ לְשָׁלוֹם וַיֵּלֶךְ מֵאֵתוֹ כְּבֵרֶת אֶרֶץ :

Parse לְהַשְׁתַּחֲוֹת and the other forms of the same root in this passage.

Comment on כְּבֵרֶת אֶרֶץ.

(e) וַיַּעַן הַשְּׁלִישׁ אִשָּׁה לְמֶלֶךְ נִשְׁעָן עַל־יָדָיו אֶת־אִישׁ הָאֱלֹהִים וַיֹּאמֶר הִנֵּה יְהוָה עֹשֶׂה אֲרָבוֹת בַּשָּׁמַיִם הִיְהִיָּה הַדְּבָר הָזֶה וַיֹּאמֶר הִנֵּכָּה רֹאֶה בְּעֵינֶיךָ וּמִשָּׁם לֹא תֹאכַל : וְאַרְבָּעָה אָנָשִׁים הָיוּ מַצְרֵעִים פֶּתַח הַשָּׁעַר וַיֹּאמְרוּ אִישׁ אֶל־רֵעֵהוּ מַה אֲנִחנוּ יֹשְׁבִים פֹּה עַד־מָתָנוּ : אִם־אָמְרֵנוּ נָבֹא הָעִיר וְהָרַעַב בָּעִיר וּמָתָנוּ שָׁם וְאִם־יֵשְׁבֵנוּ פֹּה וּמָתָנוּ וְעָתָּה לָכֵן וְנַפְלֶה אֶל־מַחֲנֶה אֲדָם אִם־יִחַיְנוּ נַחִיָּה וְאִם־יָמִיתֵנוּ וּמָתָנוּ :

Explain אִשָּׁה... יָדָיו in the first verse. Give the derivation of הַשְּׁלִישׁ.

Write out in full the tense of וּמָתָנוּ; also the tense of יָמִיתֵנוּ with suffixes of the first and third persons.

2. Write notes on the words and phrases:

יָנֹחַשׁ—פָּנִי שְׁנַיִם בְּרוּחָד—פָּעַת חִיָּה—אָנִיוֹת תַּרְשִׁישׁ—וַיֵּלֶךְ אֶל־נַפְשׁוֹ—מִתְשַׁבֵּי

3. Translate with short explanations :

(a) וישב מאחרי ויקח את צמר הבקר ויזבחהו ובכלי הבקר בשלם הבשר ויתן לעם ויאכלו ויקם וילך אחרי אליהו וישרתהו :

(b) ויקח את בנו הבכור אשר ימלך תחתיו ויעלהו עלה על החמה ויהי קצף גדול על ישראל ויסעו מעליו וישבו לארץ :

(c) ויאמר אל השעף יהוה מאין אושיעך המנהגן או מדיקב :

4. Point the following passages, supplying the two principal accents :

(a) ויאמר למלאכי בן חרד אמרו לאדני המלך כל אשר שלחת אל עבדך בראשנה אעשה והדבר הזה לא אוכל לעשות וילכו המלאכים וישברו דבר : וישלח אליו בן החד ויאמר כה יעשן לי אלהים וכה יוספו אם ישפק עפר שמרון לשעלים לכל העם אשר ברגלי : ויען מלך ישראל ויאמר דברו אל יתהלל חגר כמפתח :

(b) ויאמרו אליו הנה נא יש את עבדך חמשים אנשים בני חיל ילכו נא ויבקשו את אדניך פן גשאו רוח יהוה וישלכוהו באחד הדרים או באחת הגיאות ויאמר לא תשלחו : ויפצרו בו עד בש ויאמר שלחו וישלחו חמשים איש ויבקשו שלשה ימים ולא מצארו : וישבו אליו והוא ישב ביריחו ויאמר אלהם הלא אמרתי אליכם אל תלכו :

5. Translate into BIBLICAL HEBREW :

- (a) Be content, take two talents.
 (b) Knowest thou that the LORD will take away thy master from thy head to day? And he answered, Yea, I know it; hold ye your peace.
 (c) My father, if the prophet had bid thee do some great thing, wouldest thou not have done it? how much rather then, when he saith to thee, Wash, and be clean?
 (d) And when the servant of the man of God was risen early, and gone forth, behold, an host compassed the city both with horses and chariots.
 (e) So let the gods do to me, and more also, if I make not thy life as the life of one of them by to morrow about this time.
 (f) As the LORD thy God liveth, there is no nation or kingdom, whither my lord hath not sent to seek thee: and when they said, He is not there; he took an oath of the kingdom and nation, that they found thee not. And now thou sayest, Go, tell thy lord, Behold, Elijah is here.

THEOLOGICAL TRIPOS.

PART I.

MONDAY, June 1, 1885. 9—12.

OLD TESTAMENT. GENERAL PAPER,

WITH QUESTIONS ON THE AUTHORSHIP, DATE, SUBSTANCE, AND FORM OF JOSHUA, JUDGES, RUTH, I. II SAMUEL, JOB, AND THE MINOR PROPHETS.

A.

Not more than six questions to be answered in A.

1. WHAT account would you give of the existence among other peoples than the Hebrews of traditions similar to the records concerning Paradise and the Flood?
2. Trace the gradual growth of one of the following doctrines:—(1) a future life, (2) the admission of Gentiles to a share in the privileges of the chosen people.
3. What would seem to have been the main roads or lines of traffic in Palestine during the Old Testament period? Illustrate from the accounts of foreign invasions.
4. From what point would you date the origin of the prophetic order? Give an outline of its history down to the separation of the two kingdoms.
5. What religious principle, or principles, may be traced underlying the Festal system of the Hebrews? Mention any additions that were made to it between the Captivity and the Christian Era.
6. What is known of the political condition of Egypt in the time of Joseph and of Josiah?

or

Estimate the character and mission of Cyrus in its bearing upon the history of the chosen people.

7. Trace the rise of the Pharisaic party and its relation to the Asmonaeon princes until their supersession by Herod.

8. *Two only of Questions a b c to be answered.*

(a) Name the chief MSS. or other authorities available for reconstructing the text of the LXX. Can any groups or families be distinguished among them?

(b) Enumerate the various kinds of documentary authorities for the original text of the Old Testament. How do these differ respectively in value from the corresponding authorities for the text of the New Testament?

(c) Give a short account of the external and internal history of the revisions of the English Bible made in the reign of Elizabeth.

B.

Not more than five questions to be answered in B.

1. TRACE the successive steps in the occupation and settlement of the Holy Land under Joshua.

2. "The period of the Judges was a time of national and religious decomposition and destruction." Discuss and illustrate this statement.

3. Mention the chief instances in which various accounts of the same events are included in the books of Samuel. What light does the LXX throw upon any of the apparent discrepancies in these accounts?

4. Trace the steps that led to the Disruption, pointing out especially the influence of David's reign upon the relations between Judah and the ten tribes.

5. Examine the bearing of the leading religious ideas in the book of Job upon the question as to the date of its composition, mentioning the chief theories that have been maintained on this point.

6. Discuss the arguments for and against the integrity of the book of Zechariah.

7. Examine the Messianic references in the Minor Prophets, and point out to what extent a gradually increasing clearness can be traced in them.

8. Comment on the following passages, with reference to their context:—

(1) And the children of Dan set up the graven image: and Jonathan, the son of Gershom, the son of Manasseh, he and his sons were priests to the tribe of Dan until the day of the captivity of the land.

(2) For the children of Israel shall abide many days without a king, and without a prince, and without a sacrifice, and without an image, and without an ephod, and without teraphim.

(3) The children also of Judah and the children of Jerusalem have ye sold unto the Grecians, that ye might remove them far from their border.

(4) Come to Beth-el, and transgress; at Gilgal multiply transgression; and bring your sacrifices every morning, and your tithes after three years.

(5) Behold, his soul which is lifted up is not upright in him: but the just shall live by his faith.

(6) From beyond the rivers of Ethiopia my suppliants, even the daughter of my dispersed, shall bring mine offering.

(7) Speak unto all the people of the land, and to the priests, saying, When ye fasted and mourned in the fifth and seventh month, even those seventy years, did ye at all fast unto me, even to me?

MONDAY, June 1, 1885. 1.30—4.30.

I. AND II. SAMUEL

1. TRANSLATE, and give notes on the words to which an asterisk is affixed:

(a) וַיְהִי *לְתַקְפוֹת הַיָּמִים וַתַּהַר חַנָּה וַתֵּלֶד בֵּן וַתִּקְרָא אֶת־שְׁמוֹ שְׁמוּאֵל
כִּי מִידְּוָה *שְׁאֵלְתִּיו : וַיַּעַל הָאִישׁ אֶלְקָנָה וּכְלִבִּיתוֹ לִזְנוֹחַ לִידְוָה אֶת־זִבְחַ
הַיָּמִים וְאֶת־נְהֻרוֹ :

(b) וַעֲכָפְרִי הַדֹּב מִסַּפֵּר כָּל־עֵרִי פְלִשְׁתִּים לַחֲמִשָּׁת *הַפָּרָנִים מַעִיר מִבְּצֹר
וְעַד כָּפֹר הַפָּרִזִּי וְעַד *אֶבֶל הַגְּדֹלָה אֲשֶׁר הִנִּיחוּ עָלֶיהָ אֶת אֲרֹן יְהוָה עַד הַיּוֹם
הַזֶּה בַּשָּׂדֶה יְהוֹשֻׁעַ *בֵּית־הַשֹּׁמֶשׁ :

(c) וַיַּעַן אִישׁ *מִשֵּׁם וַיֹּאמֶר וְגַם *אֲבִיהֶם עָלְכֶן הָיְתָה לְמִשְׁלַח הַגָּם
שְׁאֵל בְּנֵי־אִים :

(d) וְלֹא תִסְאֲרוּ כִּי אַחֲרֵי *הַתְּרוֹ אֲשֶׁר לֹא־יוֹעִילוּ וְלֹא יִצְּלוּ בִּיְתֵרוֹ *הַמָּה :

(e) וַיֹּאמֶר יְהוֹנָתָן אֶל־דָּוִד יְהוָה אֱלֹהֵי יִשְׂרָאֵל כִּי־אֶחָד *אֶת־אֲבִי כָעַת
מִתֵּר הַשְּׁלִשִׁית וְהִנֵּה־טוֹב אֶל־דָּוִד וְלֹא־אֵן אֲשַׁלַּח אֵלָיְךָ *וְגַלִּיתִי אֶת־אֲזֹנְךָ : כֹּה־
יַעֲשֶׂה יְהוָה לִיהוֹנָתָן וְכֹה יִסָּף כִּי־יִמָּב אֶל־אֲבִי *אֶת־דִּרְעָה עָלֶיךָ וְגַלִּיתִי אֶת־אֲזֹנְךָ
וְשַׁלַּחְתִּיךָ וְהִלַּכְתָּ לְשָׁלוֹם וַיְהִי יְהוָה עִמָּךְ כַּאֲשֶׁר הָיָה עִם־אֲבִי :

Explain the construction of the whole of these verses.

(f) וַאִישׁ וְאִשָּׁה לֹא־יַחֲזִיחַ דָּוִד לְהַבִּיא גֵת לְאִמֶּר פֶּן־יִגְדוּ עָלֵינוּ לְאִמֶּר
כֹּה־עָשָׂה דָּוִד וְכֹה *מִשְׁפָּטוֹ כָּל־הַיָּמִים אֲשֶׁר יֵשֵׁב *בַּשָּׂדֶה פְּלִשְׁתִּים :

(g) וַיַּחַר לְאַבְנֵר מֶלֶךְ עַל־דָּבִי *אִישׁ־בִּשְׁת וַיֹּאמֶר הָרֹאשׁ כָּלֵב אֲנֹכִי
אֲשֶׁר לִידְוָה הַיּוֹם אֶעֱשֶׂה־חֶסֶד עִם־בֵּית שְׁאֵל אֲבִיךָ אֶל־אֲחִיו וְאֶל־מִרְעֻדוֹ וְלֹא
הַמְצִיתֶךָ בֵּיד דָּוִד *וְתִפְקֹד עָלַי עֵץ הָאִשָּׁה הַיּוֹם :

- (d) וַיִּשְׁלַח *בִּיד נָתַן הַנְּבִיא וַיִּקְרָא אֶת-שְׁמו *יְדִידְיָה *בְּעֶבֶר יְהוֹה :
- (e) וַעֲתָה *אֲשֶׁר-בָּאתִי לְדַבֵּר אֶל-הַמֶּלֶךְ אֲדֹנִי *אֶת-דִּבְרֵי הַזֶּה בִּי יִרְאֵנִי הָעַם וְתֹאמַר שְׂפָחוּתְךָ אֲדַבְּרָה *נָא אֶל-הַמֶּלֶךְ אֵלַי יַעֲשֶׂה הַמֶּלֶךְ אֶת-דִּבְרֵי אָמְתּוֹ : בִּי יִשְׁמַע הַמֶּלֶךְ לְהַצִּיל אֶת-אָמְתּוֹ מִכַּף הָאִישׁ *לְהַשְׁמִיד אֹתִי וְאֶת-בְּנֵי יַחֵד מִנְּחֻלַת אֱלֹהִים :
- (f) וַיֹּאמֶר בְּרוּלִי אֶל-הַמֶּלֶךְ * בְּמָה יָמִי שְׁנֵי חַיִּי בִּי-אֵעֲלֶה אֶת-הַמֶּלֶךְ יְרוּשָׁלַם : בֶּן-שְׁמֹנִים שָׁנָה אָנֹכִי הַיּוֹם הַזֶּה הָאָדָע *בֵּין-טוֹב לְרָע *אִם-יִטַּעַם עֲבָדְךָ אֶת-אֲשֶׁר אָבֵל וְאֶת-אֲשֶׁר אֲשֵׁתָה אִם-אֲשַׁמַּע עוֹד בְּקוֹל שָׂרִים וְשִׁרֹת וְלִמָּה יִהְיֶה עֲבָדְךָ עוֹד לְמִשָּׂא אֶל-אֲדֹנִי הַמֶּלֶךְ :
- (g) וַיֹּאמֶר אֲרוֹנָה אֶל-דָּוִד יִקַּח *וַיַּעַל אֲדֹנִי הַמֶּלֶךְ הַטוֹב בְּעֵינָיו רֹאֵה הַבֶּקֶר לַעֲלֹה וְהַמִּרְגָּמִים וְכָלִי הַבֶּקֶר לַעֲצִים : הַכֹּל נָתַן אֲרוֹנָה *הַמֶּלֶךְ לַמֶּלֶךְ וַיֹּאמֶר אֲרוֹנָה אֶל-הַמֶּלֶךְ יְהוֹה אֱלֹהֶיךָ *יִרְצֶךָ :

2. Without translating, notice and illustrate anything that is peculiar in the following sentences:

- (a) וּלְחֹנָה יִתֵּן מָגָה אֶחָת אֲפִים בִּי אֶת-חֹנָה אֲרֵב וַיְהוֹה סָגַר רְחֻמָּה :
- (b) וַדְּבַר יְהוֹה הָיָה יָקָר בְּיָמִים הָרִים אֵין חֹזֶן נִפְרָץ :
- (c) רַק דָּגוֹן נִשְׁאָר עָלָיו :
- (d) וַיַּחֲזֵר דָּוִד אֶת-חֲרָבּוֹ מֵעַל לְמַדְיוֹ וַיֹּאֵל לְלֶכֶת בִּי לֹא-נִסָּה וַיֹּאמֶר דָּוִד אֶל-שָׂאֵל לֹא-אֵיכָל לְלֶכֶת בְּאֵלָה בִּי לֹא נִפְתִּיתִי וַיִּסְרֵם דָּוִד מֵעָלָיו :
- (e) וְכִי-יִמָּצֵא אִישׁ אֶת-אִיבּוֹ וְשָׁלְחוֹ בְּדֶרֶךְ טוֹבָה וַיְהוֹה יִשְׁלַמְךָ טוֹבָה תַּחַת הַיּוֹם הַזֶּה אֲשֶׁר עָשִׂיתָה לִּי :
- (f) וּבְנֵי דָוִד בְּחָגִים הָיוּ :

- (g) וְדָוִד עָלָה בְּמַעְלָה הַיְּתִים עָלָה וּבֹכָה וְרָאָה לֹא חָפוּי וְדָוִד הוֹלֵךְ
יָחָף וְכָל־הָעָם אֲשֶׁר־אִתּוֹ חָפוּ אִישׁ רֹאשׁוֹ וְעָלוּ עָלָה וּבָכָה :
(h) וַיִּקְרָא לָהּ יָד אֲבִשְׁלוֹם עַד הַיּוֹם הַזֶּה :

3. Point the following passages:

(a) וּלְקַחְתִּי אֶת לַחֲמִי וְאֶת מִימִי וְאֶת מִבְּחַתִּי אֲשֶׁר מִבְּחַתִּי לְגֻזִּי וְנָתַתִּי
לְאֲנָשִׁים אֲשֶׁר לֹא יָדַעְתִּי אִי מִזֶּה הֵמָּה : וַיִּהְיוּ נַעֲרֵי דָוִד לְדֶרֶכָם וַיֵּשְׁבוּ וַיֵּבְאוּ
וַיִּגִּדּוּ לוֹ כָּל הַדְּבָרִים הָאֵלֶּה : וַיֹּאמֶר דָּוִד לְאֲנָשָׁיו חֲגֹרוּ אִישׁ אֶת חֶרְבוֹ וַיַּחְגְּרוּ
אִישׁ אֶת חֶרְבוֹ וַיַּחְגְּרוּ גַם דָּוִד אֶת חֶרְבוֹ וַיַּעֲלוּ אַחֲרָיו דָּוִד כְּאַרְבַּע מֵאוֹת אִישׁ וּמֵאֲתָיִם
יֵשְׁבוּ עַל הַכִּלִּים :

(b) וְהַשָּׂכִּים אֲבִשְׁלוֹם וְעַמֵּר עַל יַד דֶּרֶךְ הַשַּׁעַר וַיְהִי כִּי הָאִישׁ אֲשֶׁר יִהְיֶה לוֹ
רִיב לְבוֹא אֶל הַמֶּלֶךְ לְמִשְׁפַּט וַיִּקְרָא אֲבִשְׁלוֹם אֵלָיו וַיֹּאמֶר אִי מִזֶּה עֵיר אַתָּה וַיֹּאמֶר
מֵאַחֵר שְׁבָטִי יִשְׂרָאֵל עַבְדְּךָ : וַיֹּאמֶר אֵלָיו אֲבִשְׁלוֹם רֵאשִׁית דְּבָרֶיךָ טוֹבִים וְנִכְחִים
וְשָׁמַע אֵין לְךָ מֵאֵת הַמֶּלֶךְ : וַיֹּאמֶר אֲבִשְׁלוֹם מִי יִשְׁמְנִי שֹׁפֵט בָּאָרֶץ וְעָלִי יָבֹא כָל
אִישׁ אֲשֶׁר יִהְיֶה לוֹ רִיב וּמִשְׁפַּט וְהִצַּדְקָתִי : וַיְהִי בִקְרֵב אִישׁ לְהִשְׁתַּחֲוֹת לוֹ וּלְשַׁלַּח
אֶת יָדוֹ וְהַחֲזִיק לוֹ וּנְשָׁק לוֹ :

4. Give the original Hebrew of the following:

(a) And Samuel said unto all Israel, Behold, I have hearkened unto your voice in all that ye said unto me, and have made a king over you. And now, behold, the king walketh before you: and I am old and gray-headed; and, behold, my sons are with you: and I have walked before you from my childhood unto this day. Behold, here I am: witness against me before the LORD, and before his anointed: whose ox have I taken? or whose ass have I taken? or whom have I defrauded? whom have I oppressed? or of whose hand have I received any bribe to blind mine eyes therewith? and I will restore it you. And they said, Thou hast not defrauded us, nor oppressed us, neither hast thou taken ought of any man's hand.

(b) Wherefore thou art great, O LORD God: for there is none like thee, neither is there any God beside thee, according to all that we have heard with our ears. And what one nation in the earth is like thy people, even like Israel, whom God went to redeem for a people to himself, and to make him a name, and to do for you great things and terrible, for thy land, before thy people, which thou redeemedst to thee from Egypt, from the nations and their gods? For thou hast confirmed to thyself thy people Israel to be a people unto thee for ever: and thou, LORD, art become their God.

TUESDAY, June 2, 1885. 9—12.

HISTORICAL BOOKS OF THE OLD TESTAMENT.

TRANSLATION, WITH HEBREW GRAMMAR AND COMPOSITION.

1. TRANSLATE the following with grammatical notes on the words and phrases between asterisks:

(a) כִּי־יִתֵּן אִישׁ אֶל־דֵּעְוֹ חֲמוֹד אוֹ־שׁוֹר אוֹ־שֶׁה וְכָל־בְּהֵמָה לְשֹׁמֵר וְמֵת
אוֹנֶשֶׁבֶר אוֹנֶשֶׁבָה אֵין רֵאָה : שְׁבַעַת יְהוָה תְּהִיָּה בֵין שְׁנֵיהֶם *אִם־לֹא שְׁלַח*
יְדוֹ *בְּמִלְאֲכֹת* רָעָדוֹ וְלִקְחַ *בְּעָלָיו* וְלֹא יִשְׁלֹם : וְאִם־נָגַב יִגְבַּב מִעֲמֹו יִשְׁלֹם
לְבָעָלָיו : אִם־מָרַף יִמָּרַף יִבְאֶהוּ עַד הַמָּרְפָּה לֹא יִשְׁלֹם :

(b) וַיֹּאמְרוּ אֲלֵינוּ וְקִינֵינוּ וְכָל־יֹשְׁבֵי אֶרְצֵנוּ לֵאמֹר קָחוּ בְיָדְכֶם *צִידָה*
לְדֶרֶךְ גִּבּוֹ לְקִרְאָתָם וְאִמְרָתָם אֲלֵיהֶם עֲבַדְיָכֶם אֲנַחְנוּ וְעַתָּה *פִּרְתֵנוּ־לָנוּ בְרִית :
זֶה לְחֻמְנוּ חָם *הַצִּמְיָדֵנוּ* אֲחֹו מִבְּתֵינוּ בְּיוֹם צִאֲתָנוּ לְלֶכֶת אֲלֵיכֶם וְעַתָּה הִנֵּה
יָבֵשׁ *וְהִידָה* נִקְרִים : וְאֵלֶּה נִאֲדוֹת הַיָּין אֲשֶׁר מִלֵּאֲנוּ חֲדָשִׁים וְהִנֵּה הִתְפַּקְעוּ
וְאֵלֶּה שְׁלִמּוֹתֵינוּ וְגַעֲלֵנוּ *בָּלֹד* מֶלֶךְ הַדֶּרֶךְ מָאֹד : וַיִּקְחוּ הָאֲנָשִׁים מִצִּידָם *וְאֶת־פִּי
יְהוָה לֹא שָׁאֲלוּ* : וַיַּעַשׂ לָדָם יְהוֹשֻׁעַ שְׁלֹום וַיְכַרֵּת לָדָם בְּרִית לְחַיּוֹתָם וַיִּשְׁכְּעוּ
לָדָם נְשִׂאֵי הָעֵדָה :

(c) כִּי יִחְמָאֲלֶךְ כִּי אֵין אָדָם אֲשֶׁר לֹא־יִחְמָא *וְאִגְפֹת* בָּם וְנִתְּתָם לַפָּנִי
אֹיֵב וְשָׁבוּם שְׁבִידָם אֶל־אֶרֶץ הָאֹיֵב רְחוֹקָה אוֹ קְרוֹבָה : וְהוֹשִׁיבוּ אֶל־לִבָּם
בְּאֶרֶץ אֲשֶׁר נִשְׁבּוּ־שָׁם וְשָׁבוּ וְהִתְחַנְּנוּ אֵלָיִךְ בְּאֶרֶץ שְׁבִידָם לֵאמֹר *חֲמָאֲנוּ וְהִעֲוִינוּ
רָשָׁעֵנוּ* : וְשָׁבוּ אֵלָיִךְ בְּכָל־לִבָּבָם וּבְכָל־נַפְשָׁם בְּאֶרֶץ אֹיְבֵיהֶם אֲשֶׁר־שָׁבוּ אֲתָם
וְהִתְפַּלְּלוּ אֵלָיִךְ דֶּרֶךְ אֶרֶץ אֲשֶׁר־נִתְּתָה לְאֲבוֹתָם הָעִיר אֲשֶׁר בְּחֵרָתָ וְדִבִּיתָ
אֲשֶׁר־בְּגִיתָ לְשֹׁמֵךְ :

(d) וּבָעֹז עָלָה הַיָּעַר וַיֵּשֶׁב שָׁם וְהִנֵּה *הַצֹּאֵל* עֹבֵר *אֲשֶׁר דִּפְרִי־בָעֹז*
וַיֹּאמֶר סוֹרָה שְׁבֵה־פֹה *פָּלָנִי אֶל־מִנִּי* וַיֵּסֶר וַיֵּטֵב : וַיִּקַּח עֲשָׂה אֲנָשִׁים מִזִּקְנֵי
הָעִיר וַיֹּאמֶר שְׁבֵה־פֹה וַיֵּשֶׁבוּ : וַיֹּאמֶר לְנָאֵל חֲלֹקֶת הָעֲשָׂה אֲשֶׁר לְאֲחֵינוּ
לְאֵילִמְלֹךְ מִכְרָה נְעָמִי הַשְׁבָּה מִסְרָה מוֹאֵב : וַאֲנִי אִמְרָתִי *אֲגִלָּה אֲזַנְךָ* לֵאמֹר

קָנָה נָגַד הַיִּשְׁבִּים וְנָגַד זִקְנֵי עַמִּי אֶם-הִנָּאל נָאֵל וְאִם-לֹא יִנָּאל הַגִּידָה לִּי וְאֶדְעַ
כִּי אֵין זֹלָתְךָ לְנָאוֹל וְאִנְכִי אַחֲרֶיךָ וַיֹּאמֶר אֲנֹכִי אֲנָאֵל : וַיֹּאמֶר בְּעוֹז בְּיוֹם
קִנּוּתְךָ הַשָּׂדֶה מִיָּד נָעָמִי וּמֵאֵת רוּת הַמּוֹאָבִיָּה אִשְׁת־דִּמְתָּ קִנִּיתִי לְדָקִים שֵׁם
דִּמְתָּ עַל-נִחְלָתוֹ : וַיֹּאמֶר הַגָּאֵל לֹא אֹכֵל לְנָאוֹל-לִי פָר־אֲשֻׁחִית אֶת-נִחְלָתִי
נָאֵל-לְךָ אֵתָּה אֶת-נִאֲלָתִי כִּי לֹא-אֹכֵל לְנָאוֹל : וְהָאֵת *לְפָנַי* בְּיִשְׂרָאֵל עַל-
הַגָּאֵל וְעַל-הַתְּמָרָה *לְקַיִם* כִּלְדָּבָר שֶׁלֶף אִישׁ נָעָלוֹ וְנָתַן לְרַעְיוֹ וְהָאֵת הַתְּמָרָה
בְּיִשְׂרָאֵל :

• מלרע • קמץ ברוך • וארשה קר • קנית קר • יחיד ר
Explain these notes.

(a) וַאֲמָרָה אֱלֹהֵי בִשְׁתִּי וְנִכְלַמְתִּי לְדָרִים אֱלֹהֵי פָנַי אֵלֶיךָ כִּי עֹנֻתֵינוּ
רָבוּ *לְמַעַלְהָ הָאִשׁ* *וְאֲשַׁמְתֵּנוּ* גְּדֻלָּה עַד לַשָּׁמַיִם : מִיָּמֵינוּ אֲבִיתֵנוּ אֲנַחְנוּ בְּאִשְׁמָה
גְּדֻלָּה עַד הַיּוֹם הַזֶּה וּבְעֹנֻתֵינוּ *נִתְּנוּ* אֲנַחְנוּ מַלְכֵינוּ כְּרִנֵּינוּ בְּיַד מַלְכֵי רְאֲצוֹת
בְּחָרָב בְּשָׁבִי וּבְבִקָּהּ וּבְבִשְׁתִּי פָנִים בְּרָחִם הָזֶה : וְעַתָּה *כְּמַעֲמַדְגָּע* הִיְתָה תַחְנוּהָ
מֵאֵת יְהוָה אֱלֹהֵינוּ לְהַשְׁאִיר לָנוּ פְּלִיטָה וְלִתְתֹּלֵנוּ *יִתֵּר* בְּמָקוֹם קָדְשׁוֹ לְהַאִיר
עֵינֵינוּ אֱלֹהֵינוּ וְלִתְתֵּנוּ מַחִיָּה מַעַט בְּעִבְדָּתֵנוּ : כִּי-עֲבָדִים אֲנַחְנוּ וּבְעִבְדָּתֵנוּ לֹא
עָזַבְנוּ אֱלֹהֵינוּ *וַיִּטְעֵנוּ* חֶסֶד לְפָנַי מַלְכֵי פָרַם לִתְתֹּלֵנוּ מַחִיָּה לְרוֹמֵם אֶת-בֵּית
אֱלֹהֵינוּ וּלְהַעֲמִיד אֶת-חֲרִבָּתוֹ וְלִתְתֹּלֵנוּ נָגַד בִּירוּדָהּ וּבִירוּשָׁלָם :

2. (a) דְּבַר-נָא אֵל עֲבָדֶיךָ אֲרָמִית כִּי שְׁמַעִים אֲנַחְנוּ וְאֵל תִּדְבֵּר עִמָּנוּ
יְהוּדִית :

(b) *Ο λέγεται Ἑβραϊστὶ Γολγοθᾶ.

How are the languages mentioned in these two passages related? Which of them were used in the original composition of the O. T. Scriptures, and in what books?

3. Write down the following:

- Possessive affixes of פֶּה sing. and of אֶחָ plural.
 - 2 pl. m. poss. affix of אֶרֶץ, בֵּית, חֲטָאֵת, קָדֵשׁ in singular and plural.
 - The two tenses of the Hiphil voice of עָלָה and the Kal voice of סָבַב.
4. What purposes do the Hebrew Accents serve? Accentuate the forms in 3 (c).
5. Translate and explain the syntax of the following sentences:

(a) מוֹת יוֹמָת הָאִישׁ רָנָם אֹתוֹ בְּאִבְנֵים כִּלְדָּעָה מְרוֹץ לְמַחְנֶה :
(b) הַמִּקְנָא אֵתָּה לִי וּמִי יֵתֵן כָּל עֵם יְהוָה נְבִיאִים כִּי יֵתֵן יְהוָה אֵת
רַחוּ עֲלֵיכֶם :

(c) וַיֹּאבְדוּ הַבָּדִים וַיֵּרָא רֹאשֵׁי הַבָּדִים מִן־הַקֶּשֶׁל עַל־פְּנֵי הַדְּבִיר וְלֹא יֵרָא הַחֹצֶה וַיְהִי שֵׁם עַד הַיּוֹם הַזֶּה :

6. Point the following passages, adding the accents in passage (a):

(a) וַאֲעֹשֶׂךָ לְגוֹי גָדוֹל וְאֶבְרַכְךָ וְאֶגְדַּלְהָ שֶׁמֶךָ וְהָיָה בְרָכָה : וְאֶבְרַכְהָ מִבְּרִכְיָךָ וּמִקְלָלְךָ אֲאִיר וְנִבְרַכְנוּ בְּךָ כָּל מִשְׁפַּחַת הָאָדָמָה :

(b) וַעֲתָה יֵרָא פְרַעְהָ אִישׁ נָבֹן וְחָכָם וַיִּשְׁתַּהּוּ עַל אֶרֶץ מִצְרַיִם : יַעֲשֶׂה פְרַעְהָ וַיִּפְקֹד פְּקָדִים עַל הָאָרֶץ וְחָמַשׁ אֶת אֶרֶץ מִצְרַיִם בִּשְׁבַע שָׁנֵי הַשְּׁבַע : וַיִּקְבְּצוּ אֶת כָּל אֹכֵל הַשָּׁנִים הַטּוֹבוֹת הַבָּאָת הָאֵלֶּה וַיִּצְבְּרוּ בַּר תַּחַת יַד פְּרַעְהָ אֹכֵל בְּעָרִים וּשְׁמֵרוֹ : וְהָיָה הָאֹכֵל לִפְקֹדֹן לָאָרֶץ לִשְׁבַע שָׁנֵי הָרַעַב אֲשֶׁר תִּהְיֶין בָּאָרֶץ מִצְרַיִם וְלֹא תִכְרַת הָאָרֶץ בְּרַעַב : וַיִּיטֹב הַדְּבַר בְּעֵינֵי פְרַעְהָ וּבְעֵינֵי כָל עַבְדָּיו : וַיֹּאמֶר פְּרַעְהָ אֶל עַבְדָּיו הִנֵּמְצָא כֹּהֵ אִישׁ אֲשֶׁר רוּחַ אֱלֹהִים בּוֹ : וַיֹּאמֶר פְּרַעְהָ אֶל יוֹסֵף אַחֲרֵי הוֹדִיעַ אֱלֹהִים אוֹתְךָ אֶת כָּל זֹאת אֵין נָבֹן וְחָכָם כַּמוֹךָ :

(c) כֹּה אָמַר יְהוָה הַנְּנִי מִבִּיא רָעָה אֶל הַמָּקוֹם הַזֶּה וְעַל יוֹשְׁבָיו אֶת כָּל דְּבַר הַסֵּפֶר אֲשֶׁר קָרָא מֶלֶךְ יְהוּדָה : תַּחַת אֲשֶׁר עֲזָבוּנִי וַיִּקְטְרוּ לֵאלֹהִים אֲחֵרִים לִמְעַן הַבְּעִסְנִי בָכָל מַעֲשֵׂה יְדֵיהֶם וְנִצַּתָּה חֲמָתִי בַּמָּקוֹם הַזֶּה וְלֹא תִכְבֶּה : וְאֵל מֶלֶךְ יְהוּדָה הִשְׁלַח אֶתְכֶם לִדְרֹשׁ אֶת יְהוָה כֹּה תֹאמְרוּ אֵלָיו כֹּה אָמַר יְהוָה אֱלֹהֵי יִשְׂרָאֵל הַדְּבָרִים אֲשֶׁר שָׁמַעְתָּ : יֵעַן רַךְ לְבָבְךָ וְתִכְנַע מִפְּנֵי יְהוָה בְּשִׁמְעֶךָ אֲשֶׁר דִּבַּרְתִּי עַל הַמָּקוֹם הַזֶּה וְעַל יוֹשְׁבָיו לֵהוֹיֹת לִשְׁמָה וּלְקַלְלָהּ וּתִקְרַע אֶת בִּגְדֶיךָ וְתִכְבֶּה לִפְנֵי וְגַם. אֲנִי שָׁמַעְתִּי נָאִם יְהוָה : לִכֵּן הַנְּנִי אֶסְפֹּךְ עַל אֲבֹתֶיךָ וְנִאֲסַפְתָּ אֶל קִבְרֹתֶיךָ בְּשָׁלוֹם וְלֹא תִרְאִינָה עֵינֶיךָ בָּכָל הָרָעָה אֲשֶׁר אֲנִי מִבִּיא עַל הַמָּקוֹם הַזֶּה וַיִּשְׁבּוּ אֶת הַמֶּלֶךְ דָּבָר :

7. Translate into Biblical Hebrew:

Then the children of Israel cried unto the Lord their God, because their heart failed, for all their enemies had compassed them round about, and there was no way to escape out from among them. Thus all the company of Assur remained about them, both their footmen, chariots, and horsemen, four and thirty days, so that all their vessels of water failed all the inhabitants of Bethulia. And the cisterns were emptied, and they had not water to drink their fill for one day; for they gave them drink by measure. Therefore their young children were out of heart, and their women and young men fainted for thirst, and fell down in the streets of the city, and by the passages of the gates, and there was no longer any strength in them. Then all the people assembled to Ozias, and to the chief of the city, both young men, and women, and children, and cried with a loud voice, and said before all the elders, God be judge between us and you: for you have done us great injury, in that you have not required peace of the children of Assur.

TUESDAY, June 2, 1885. 1.30—4.30.

NEW TESTAMENT. GENERAL PAPER.

A.

1. FOR what books of the New Testament is there clear external evidence before the end of the first century? Point out the special value of the evidence in each case.

2. Give examples of the bearing of Textual Criticism on the question of the date at which the Canonical Books became current.

3. What was the attitude of the various Gnostic sects towards the Canonical Books? What influence did Gnosticism as a whole exert upon the settlement of the Canon?

4. Mark out clearly the differences between the Canon of Alexandria and that of Rome in the time of Origen.

5. Discuss the external evidence for the reception of 2 St Peter.

6. "Mallem paucos adnotasset librariorum manifestos errores quam centum veras lectiones." Explain the principle involved in this remark. How would you apply it to the criticism of the New Testament?

7. It has recently been contended that the text of \aleph B and the allied MSS. is due to a revision based upon the critical studies of Origen. Examine this theory.

8. Give some account of Eusebius' Letter to Carpianus, Jerome's 'Praefatio ad Damasum', the first printed Greek New Testament, Wetstein's Greek New Testament, Griesbach's 'Symbolae Criticae'.

9. Explain the following notes:

ai] $\tau\delta\upsilon\omicron\tau$ Western (Gr. [D 29 Eus.*Mar*] Lat.)...Also <Alexandrian and Syrian (Gr. \mathcal{A} th.Arm.); incl. \aleph AC Eus.2/3. Text BLPX 1-131 13-69-346 22 33 157 *ai*^p me the syr.vt-vg-hl.

[*καὶ ἀνεφάρπετο εἰς τὸν οὐρανόν*] < Western, \aleph^* D *a b e ff rhe* Aug.1/2; not *c* Aug.1/2: syr.vt is defective.

A Western non-interpolation.

B.

I. Distinguish the extant sources of evidence (other than the New Testament itself) for ascertaining the sense in which moral or theological terms are used by the writers of the New Testament, pointing out the limitations under which the evidence is available in each case.

II. Mention the more important words found **either** (1) in the Epistles to the Philippians, Ephesians, Colossians, and Philemon, **or** (2) in the Pastoral Epistles, which are absent from St Paul's other Epistles, indicating and explaining any instances in which this restriction of use might in your judgement be reasonably accounted for by the changed circumstances under which these two groups of Epistles were written.

III. Collect and trace to their sources the Messianic titles used in the Apocalypse, and mention any other places in which any of them occur in the New Testament. Give examples of difference of vocabulary and grammatical usage between quotations in the New Testament and the books in which they are quoted.

IV. State and illustrate the chief meanings of **eight** of the following words (1) in the Gospels and Acts, (2) in the other books of the New Testament, and (3) in classical and ecclesiastical literature:—*ἀγωνία*, *αἵρεσις*, *ἀντίληψις*, *ἀπλότης*, *ἀποκατάστασις*, *διακρίνομαι*, *δόγμα*, *ἐνεργέω*, *ἐπαγωνίζομαι*, *καταρτίζω*, *κοσμικός*, *κτίσις*, *οἰκονομία*, *παλιγγενεσία*, *πρόθεσις*.

V. Distinguish and illustrate the sense or senses of

(1) each of the several Greek words translated in the Authorised Version by *appoint*, *gift*, *mind* (subst.), *minister* (verb), *offer* [*up*];

(2) of *ἀνόσιος*, *ἀσεβής*, *ἄνομος*, *ἄδικος*;

and (3) of *τελέω*, *τελειόω*, *πληρῶω*, *πληροφορέω*.

VI. Account for the article in the following passages:—(1) *ἰδὼν δὲ τοὺς ὄχλους ἀνέβη εἰς τὸ ὄρος*; (2) *οὐ χρεῖαν εἶχεν ἵνα τις μαρτυρήσῃ περὶ τοῦ ἀνθρώπου, αὐτὸς γὰρ ἐγίνωσκεν τί ἦν ἐν τῷ ἀνθρώπῳ*; (3) *σὺ εἰ ὁ διδάσκαλος τοῦ Ἰσραὴλ*; (4) *ὡσαύτως καὶ τὸ ποτήριον μετὰ τὸ δεῖπνῆσαι* (in contrast to the other records);

and for the combination of its presence and its absence in the following passages:—(5) *τὸν θεὸν μὴ φοβούμενος καὶ ἀνθρώπον μὴ ἐντροπόμενος*; (6) *μὴ ἀγαπῶμεν λόγῳ μὴδὲ τῇ γλώσσῃ ἀλλὰ ἐν ἔργῳ καὶ ἀληθείᾳ*; (7) *ὃς δικαιοῦσιν περιτομὴν ἐκ πίστεως καὶ ἀκροβυστίαν διὰ τῆς πίστεως*; (8) *καταργήσαντος μὲν τὸν θάνατον φωτίσαντος δὲ ζωὴν καὶ ἀφθαρσίαν*.

VII. (1) Distinguish and illustrate the several prepositions which may be rendered *without* in the New Testament.

(2) Classify with examples the uses of the participle with *εἰμι*. Discuss the construction of *ἅμα δὲ καὶ ἀργαὶ μανθάνουσιν περιερχόμεναι τὰς οἰκίας*.

(3) Examine the use of negative particles in questions in the New Testament.

(4) Discuss the constructions of *καλὸν γενησάμενους θεοῦ ῥῆμα* and *διδασκαλίας δαιμονίων ἐν ὑποκρίσει ψευδολόγων*; and explain the changes of tense in *οὐχ ὅτι ἤδη ἔλαβον ἢ ἤδη τετελείωμαι* and *κατενόησεν γὰρ ἑαυτὸν καὶ ἀπελήλυθεν καὶ εὐθέως ἐπελάβετο ὁποῖος ἦν*.

VIII. Translate into Greek

Then when Judas Thomas saw them, he lifted up his voice and said

To thee be glory, Living One who art from the Living One; to thee be glory, Giver of life to many; to thee be glory, Helper of those who come to thy place of refuge; to thee be glory, thou that wakest from all eternity, the Awaker of men, living and making alive. Thou art God, the Son of God, the Saviour and Helper, the Refuge and Rest of all them that are weary in thy work; the Giver of rest to those who for thy name's sake have borne the burden of the whole day at noon. We praise thee for thy gift unto us, and for thy succour to our feebleness, and for thy provision for our poverty. Make perfect with us thy grace and thy mercy unto the end, and give us the boldness that is in thee.

WEDNESDAY, June 3, 1885. 9—12.

THE FOUR GOSPELS,

WITH SPECIAL REFERENCE TO THE GOSPEL ACCORDING TO ST LUKE.

A.

1. TRANSLATE, with short notes on the words spaced,

(α) ἐν ἐκείνῳ τῷ καιρῷ ἐπορεύθη ὁ Ἰησοῦς τοῖς σάββασιν διὰ τῶν σπορίμων· οἱ δὲ μαθηταὶ αὐτοῦ ἐπείνασαν καὶ ἤρξαντο τίλλειν στάχυν καὶ ἐσθίειν. οἱ δὲ Φαρισαῖοι ἰδόντες εἶπαν αὐτῷ Ἰδοὺ οἱ μαθηταί σου ποιοῦσιν ὃ οὐκ ἔξεστιν ποιεῖν ἐν σαββάτῳ. ὁ δὲ εἶπεν αὐτοῖς Οὐκ ἀνέγνωτε τί ἐποίησεν Δαυεὶδ ὅτε ἐπείνασεν καὶ οἱ μετ' αὐτοῦ; πῶς εἰσῆλθεν εἰς τὸν οἶκον τοῦ θεοῦ καὶ τοὺς ἄρτους τῆς προθέσεως ἔφαγον, ὃ οὐκ ἐξὸν ἦν αὐτῷ φαγεῖν οὐδὲ τοῖς μετ' αὐτοῦ εἰ μὴ τοῖς ἱερεῦσιν μόνοις;

(β) καὶ ὁ πολὺς ὄχλος ἤκουεν αὐτοῦ ἡδέως. Καὶ ἐν τῇ διδαχῇ αὐτοῦ ἔλεγεν Βλέπετε ἀπὸ τῶν γραμματέων τῶν θελόντων ἐν στολαῖς περιπατεῖν καὶ ἄσπασμους ἐν ταῖς ἀγοραῖς καὶ πρωτοκαθεδρίας ἐν ταῖς συναγωγαῖς καὶ πρωτοκλισίας ἐν τοῖς δείπνοις, οἱ κατέσθοντες τὰς οἰκίας τῶν χηρῶν καὶ προφάσει μακρὰ προσευχόμενοι· οὗτοι λήμψονται περισσότερον κρίμα.

Discuss the punctuation of the last two lines.

(γ) διὰ τοῦτο οὐκ ἠδύναντο πιστεύειν ὅτι πάλιν εἶπεν Ἡσαίας Τετύφλωκεν αὐτῶν τοὺς ὀφθαλμοὺς καὶ ἐπώρρωσεν αὐτῶν τὴν καρδίαν, ἵνα μὴ ἴδωσιν τοῖς ὀφθαλμοῖς καὶ νοήσωσιν τῇ καρδίᾳ καὶ στραφῶσιν, καὶ ἰάσομαι αὐτούς. ταῦτα εἶπεν Ἡσαίας ὅτι εἶδεν τὴν δόξαν αὐτοῦ, καὶ ἐλάλησεν περὶ αὐτοῦ.

2. Retranslate into the original Greek

Jesus answered and said unto him, What I do thou knowest not now; but thou shalt know hereafter. Peter saith unto him, Thou shalt never wash my feet. Jesus answered him, If I wash thee not, thou hast no part with me. Simon Peter saith unto him, Lord, not my feet only, but also my hands and my head. Jesus saith to him, He that is washed needeth not save to wash his feet, but is clean every whit.

3. Shew the importance of the place occupied by the Transfiguration in the history of our Lord's life on earth. How does St John refer to His Baptism and Ascension?

4. Compare the teaching of the Sermon on the Mount as regards Prayer, Fasting, and Almsgiving with (1) any one earlier and (2) any one later Scriptural injunction on these topics or duties.

5. Classify our Lord's Parables narrated in St Mark's Gospel. Which Miracles are peculiar to the Gospel according to St Matthew, and what do you consider to be their bearing on the character of this Gospel?

6. Write notes on **eight** of the following words and phrases as used in the Gospels:—

ἀμήν, βδέλυγμα ἐρημώσεως, ἐγκαίνια, ἐκκλησία, ἐπιούσιος, ἐσχάτως ἔχει, κολλυβιστής, μεταμεληθείς, μυστήριον, ναός, πιστεύειν εἰς τινά, πλήρωμα, πτώμα, ῥῆμα, συνάγειν.

7. What characteristic acts or sayings of any of the Eleven Apostles other than St Peter and the sons of Zebedee are recorded in the Gospels? What events are connected with Cæsarea Philippi, the Wilderness of Judæa, Decapolis?

8. Compare the Christology of St Matthew's Gospel with that of St John's Gospel.

B.

1. WHAT is the testimony of Justin Martyr to St Luke's Gospel? How far is it true to say that the chief importance of this testimony consists in Justin's notice of incidents of our Lord's history peculiar to St Luke? Specify some of these incidents.

2. Give the preface to St Luke's Gospel in Greek, and write a full commentary on it, pointing out its bearing on the origin of the Synoptists generally, and of this Gospel in particular.

OR

St Luke's has been called the Pauline Gospel. Discuss the justice of this description, and support your answer by reference to variations of detail in passages common to St Luke with the other Synoptists, as well as by reference to the sections peculiar to St Luke.

3. Discuss the text in **two** of the following passages:—

(α) ἐπὶ γῆς εἰρήνη ἐν ἀνθρώποις εὐδοκίας.

(β) τοῦτό ἐστιν τὸ σῶμά μου τὸ ὑπὲρ ὑμῶν διδόμενον.

(γ) ὤφθη δὲ αὐτῷ ἄγγελος ἀπὸ τοῦ οὐρανοῦ ἐνισχύων αὐτόν.

(δ) ἰχθύος ὀπτοῦ μέρος καὶ ἀπὸ μελισσίου κηρίον.

4. Without translating, write notes on

(α) καὶ εἰς δανίσσητε παρ' ὧν ἐλπίζετε λαβεῖν, ποία ὑμῖν χάρις ἐστίν; καὶ ἁμαρτωλοὶ ἁμαρτωλοῖς δανίζουσιν ἵνα ἀπολάβωσιν τὰ ἴσα. πλὴν ἀγαπᾶτε τοὺς ἐχθροὺς ὑμῶν καὶ ἀγαθοποιεῖτε καὶ δανίζετε μηδὲν ἀπελπίζοντες· καὶ ἔσται ὁ μισθὸς ὑμῶν πολὺς, καὶ ἔσεσθε υἱοὶ Ὑψίστου, ὅτι αὐτὸς χρηστός ἐστιν ἐπὶ τοὺς ἀχαρίστους καὶ πονηροὺς.

(β) εἶπεν δὲ ὁ κύριος πρὸς αὐτόν· Νῦν ὑμεῖς οἱ Φαρισαῖοι τὸ ἐξωθεν τοῦ ποτηρίου καὶ τοῦ πίνακος καθαρίζετε, τὸ δὲ ἔσωθεν ὑμῶν γέμει ἀρπαγῆς καὶ πονηρίας. ἄφρονες, οὐχ ὁ ποιήσας τὸ ἐξωθεν καὶ τὸ ἔσωθεν ἐποίησεν; πλὴν τὰ ἐνόντα δότε ἐλεημοσύνην, καὶ ἰδοὺ πάντα καθαρὰ ὑμῖν ἐστίν.

(γ) ἤκουον δὲ ταῦτά πάντα οἱ Φαρισαῖοι φιλάργυροι ὑπάρχοντες, καὶ ἐξεμυκτήριζον αὐτόν. καὶ εἶπεν αὐτοῖς Ὑμεῖς ἐστὲ οἱ δικαιοῦντες ἑαυτοὺς ἐνώπιον τῶν ἀνθρώπων, ὁ δὲ θεὸς γινώσκει τὰς καρδίας ὑμῶν· ὅτι τὸ ἐν ἀνθρώποις ὑψηλὸν βδέλυγμα ἐνώπιον τοῦ θεοῦ. Ὁ νόμος καὶ οἱ προφῆται μέχρι Ἰωάννου· ἀπὸ τότε ἡ βασιλεία τοῦ θεοῦ εὐαγγελίζεται καὶ πᾶς εἰς αὐτὴν βιάζεται. Εὐκοπώτερον δὲ ἐστὶν τὸν οὐρανὸν καὶ τὴν γῆν παρελθεῖν ἢ τοῦ νόμου μίαν κερέαν πεσεῖν. Πᾶς ὁ ἀπολύων τὴν γυναῖκα αὐτοῦ καὶ γαμῶν ἑτέραν μοιχεύει, καὶ ὁ ἀπολελυμένην ἀπὸ ἀνδρὸς γαμῶν μοιχεύει.

Examine the connexion of this with the preceding and succeeding contexts.

(δ) καὶ πεσοῦνται στόματι μαχαίρης καὶ αἰχμαλωτισθήσονται εἰς τὰ ἔθνη πάντα, καὶ Ἱερουσαλὴμ ἔσται πατουμένη ὑπὸ ἐθνῶν, ἄχρι οὗ πληρωθῶσιν καὶ ἔσονται καιροὶ ἐθνῶν.

Compare the discourse from which these words are taken with the similar discourses in St Matthew.

5. Translate and comment on the following clauses, with careful attention to the grammar:—

- (α) τὸ γεννώμενον ἅγιον κληθήσεται υἱὸς θεοῦ.
- (β) ἐπὶ ἀρχιερέως Ἄννα καὶ Καϊάφα.
- (γ) ἔα, τί ἡμῖν καὶ σοί;
- (δ) συνοχὴ ἐθνῶν ἐν ἀπορίᾳ ἡχοῦς θαλάσσης καὶ σάλου.
- (ε) ὁ κριτὴς τῆς ἀδικίας.
- (ζ) θεὸς οὐκ ἔστιν νεκρῶν ἀλλὰ ζώντων.
- (η) σὺ μόνος παροικεῖς Ἱερουσαλὴμ καὶ οὐκ ἔγνων τὰ γενόμενα ἐν αὐτῇ;

6. Translate and explain the following words and phrases:—

ἔλαχε τοῦ θυμιάσαι—ἐν τῇ προσευχῇ τοῦ θεοῦ—τί θέλω εἰ ἤδη ἀνήφθη—ἐκλείποντος τοῦ ἡλίου—στρατευόμενοι—πράκτωρ—ἀποστοματίζειν—λίθος μυλικός—τρῆμα βελόνης—ἀνάθημα—ὑγρὸν ξύλον—ἄτοπον—ὑπωπιάζειν.

7. Retranslate into the original Greek

(α) And he said to them all, If any man will come after me, let him deny himself, and take up his cross daily, and follow me. For whosoever will save his life shall lose it: but whosoever will lose his life for my sake, the same shall save it. For what is a man advantaged, if he gain the whole world, and lose himself, or be cast away?

(β) And Jesus answered and said unto her, Martha, Martha, thou art careful and troubled about many things: but one thing is needful: and Mary hath chosen that good part, which shall not be taken away from her.

WEDNESDAY, June 3, 1885. 1.30—4.30.

THE ACTS OF THE APOSTLES, THE EPISTLES, AND THE APOCALYPSE,

WITH SPECIAL REFERENCE TO THE EPISTLE TO THE COLOSSIANS
AND THE FIRST EPISTLE OF ST PETER.

A.

1. TRACE in the Acts the process by which the believers became distinguished as a separate body.

2. How far may the Conversion of St Paul be considered a sudden change? and what circumstances combined to draw him subsequently to the special evangelizing of the Gentiles?

3. What do we learn of the organization of the Church (1) from the Acts and the Epistles of St Paul (the Pastoral Epistles excepted), (2) from the Apocalypse? What ground is there for supposing that the Church of Jerusalem served as a model for others?

4. What traces do we find in the New Testament (the Gospels excepted) of acquaintance with (1) Alexandrian thought, (2) Gentile literature? and what traces of (3) Jewish and (4) Christian compositions, not included in the Canon?

5. Translate carefully and explain the following passages:—

(a) καὶ ἐγένετο ἄφνω ἐκ τοῦ οὐρανοῦ ἦχος ὥσπερ †φερομένης πνοῆς βιαίας καὶ ἐπλήρωσεν ὅλον τὸν οἶκον οὗ ἦσαν καθήμενοι, καὶ ὤφθησαν αὐτοῖς †διαμεριζόμεναι γλῶσσαι ὡσεὶ πυρός, καὶ ἐκάθισεν ἐφ' ἓνα ἕκαστον αὐτῶν, καὶ ἐπλήσθησαν πάντες πνεύματος ἁγίου, καὶ ἤρξαντο λαλεῖν ἑτέροις γλώσσαις καθὼς τὸ πνεῦμα ἐδίδου ἀποφθέγγεσθαι αὐτοῖς.

(b) ὅσάκις γὰρ ἐὰν ἐσθίητε τὸν ἄρτον τοῦτον καὶ τὸ ποτήριον πίνετε, τὸν θάνατον τοῦ κυρίου †καταγγέλλετε, ἄχρι οὗ ἔλθῃ. ὥστε ὃς ἂν ἐσθίῃ τὸν ἄρτον ἢ πίνῃ τὸ ποτήριον τοῦ κυρίου ἀναξίως, †ἔνοχος ἔσται τοῦ σώματος καὶ τοῦ αἵματος τοῦ κυρίου. δοκιμαζέτω δὲ ἄνθρωπος ἑαυτόν, καὶ οὕτως ἐκ τοῦ ἄρτου ἐσθιέτω καὶ ἐκ τοῦ ποτηρίου πινέτω· ὁ γὰρ ἐσθίων καὶ πίνων κρίμα ἑαυτῷ ἐσθίει καὶ πίνει μὴ †διακρίνων τὸ σῶμα. διὰ τοῦτο ἐν ὑμῖν πολλοὶ ἀσθενεῖς καὶ ἄρρωστοι καὶ κοιμῶνται ἱκανοί. εἰ δὲ ἑαυτοὺς διεκρίνομεν, οὐκ ἂν ἐκρινόμεθα· κρινόμενοι δὲ ὑπὸ τοῦ κυρίου παιδευόμεθα, ἵνα μὴ σὺν τῷ κόσμῳ κατακριθῶμεν.

(c) *μη ἀποβάλητε οὖν τὴν ἑπαγγελίαν ὑμῶν, ἥτις ἔχει μεγάλην μισθαποδοσίαν, ὑπομονῆς γὰρ ἔχετε χρεῖαν ἵνα τὸ θέλημα τοῦ θεοῦ ποιήσαντες κομίσθητε τὴν ἐπαγγελίαν· ἔτι γὰρ μικρὸν ὅσον ὅσον, ὁ ἐρχόμενος ἤξει καὶ οὐ χρονίσει· ὁ δὲ δίκαιός [μου] ἐκ πίστεως ζήσεται, καὶ εἰς ὑποστείλῃται, οὐκ εὐδοκεῖ ἡ ψυχὴ μου ἐν αὐτῷ. ἡμεῖς δὲ οὐκ ἐσμὲν ὑποστολῆς εἰς ἀπώλειαν, ἀλλὰ πίστεως εἰς περιποίησιν ψυχῆς. ἔστιν δὲ πίστις ἐλπίζομένων ὑπόστασις, πραγμάτων ἐλεγχος οὐ βλεπομένων.*

Illustrate from other passages of the New Testament the use of the words obelized.

6. Illustrate from these books the teaching of St Paul, St James, and St Peter respectively on political and social institutions.

7. Give the original Greek of the following:—

(a) Having therefore obtained help of God, I continue unto this day, witnessing both to small and great, saying none other things than those which the prophets and Moses did say should come: That Christ should suffer, and that he should be the first that should rise from the dead, and should shew light unto the people, and to the Gentiles.

(b) Every good gift and every perfect gift is from above, and cometh down from the Father of lights, with whom is no variableness, neither shadow of turning. Of his own will begat he us with the word of truth, that we should be a kind of firstfruits of his creatures.

(c) Fear not; I am he that liveth, and was dead; and behold, I am alive for evermore, Amen, and have the keys of hell and of death.

B.

1. WITHOUT translating, write notes on the following:—

(a) *Θέλω γὰρ ὑμᾶς εἰδέναι ἡλίκον ἀγῶνα ἔχω ὑπὲρ ὑμῶν καὶ τῶν ἐν Λαοδικίᾳ καὶ ὅσοι οὐχ ἑώρακαν τὸ πρόσωπόν μου ἐν σαρκί, ἵνα παρακληθῶσιν αἱ καρδίαι αὐτῶν, συνβιβασθέντες ἐν ἀγάπῃ καὶ εἰς πᾶν πλοῦτος τῆς πληροφορίας τῆς συνέσεως, εἰς ἐπίγνωσιν τοῦ μυστηρίου τοῦ θεοῦ, Χριστοῦ, ἐν ᾧ εἰσὶν πάντες οἱ θησαυροὶ τῆς σοφίας καὶ γνώσεως ἀπόκρυφοι. Τοῦτο λέγω ἵνα μηδεὶς ὑμᾶς παραλογίζεται ἐν πιθανολογίᾳ. εἰ γὰρ καὶ τῇ σαρκὶ ἄπειμι, ἀλλὰ τῷ πνεύματι σὺν ὑμῖν εἰμί, χαίρων καὶ βλέπων ὑμῶν τὴν τάξιν καὶ τὸ στερέωμα τῆς εἰς Χριστὸν πίστεως ὑμῶν.*

Discuss the chief variation of reading in the above passage.

(b) *Ἐνδύσασθε οὖν ὡς ἐκλεκτοὶ τοῦ θεοῦ, ἅγιοι καὶ ἠγαπημένοι, σπλάγχνα οἰκτιρμοῦ, χρηστότητα, ταπεινοφροσύνην, πραῢτητα, μακροθυμίαν, ἀνεχόμενοι ἀλλήλων καὶ χαριζόμενοι ἑαυτοῖς ἕαν τις πρὸς τινα ἔχη μομφήν· καθὼς καὶ ὁ κύριος ἐχαρίσατο ὑμῖν οὕτως καὶ ὑμεῖς· ἐπὶ πᾶσι δὲ τούτοις τὴν ἀγάπην, ᾧ ἐστὶν σύνδεσμος τῆς τελειότητος. καὶ ἡ εἰρήνη τοῦ χριστοῦ βραβεύετω ἐν ταῖς καρδίαις ὑμῶν, εἰς ἣν καὶ ἐκλήθητε ἐν [ἐν] σώματι· καὶ εὐχάριστοι γίνεσθε.*

(c) Διὸ ἀναζωσάμενοι τὰς ὁσφύας τῆς διανοίας ὑμῶν, νήφοντες τελείως, ἐλπίζατε ἐπὶ τὴν φερομένην ὑμῖν χάριν ἐν ἀποκαλύψει Ἰησοῦ Χριστοῦ. ὥς τέκνα ὑπακοῆς, μὴ συσχηματιζόμενοι ταῖς πρότερον ἐν τῇ ἀγνοίᾳ ὑμῶν ἐπιθυμίαις, ἀλλὰ κατὰ τὸν καλέσαντα ὑμᾶς ἅγιον καὶ αὐτοὶ ἅγιοι ἐν πάσῃ ἀναστροφῇ γενήθητε, διότι γέγραπται [ὅτι] Ἅγιοι ἔσεσθε, ὅτι ἐγὼ ἅγιος. καὶ εἰ πατέρα ἐπικαλείσθε τὸν ἀπροσωπολήμπτως κρίνοντα κατὰ τὸ ἐκάστου ἔργον, ἐν φόβῳ τὸν τῆς παροικίας ὑμῶν χρόνον ἀναστράφητε.

(d) Διὰ Σιλουανοῦ ὑμῖν τοῦ πιστοῦ ἀδελφοῦ, ὡς λογίζομαι, δι' ὀλίγων ἔγραψα, παρακαλῶν καὶ ἐπιμαρτυρῶν ταύτην εἶναι ἀληθῆ χάριν τοῦ θεοῦ εἰς ἣν στήτε. Ἀσπάζεται ὑμᾶς ἡ ἐν Βαβυλῶνι συνεκλεκτὴ καὶ Μάρκος ὁ υἱός μου. Ἀσπάσασθε ἀλλήλους ἐν φιλήματι ἀγάπης.

2. What early forms of error are combated in the Epistle to the Colossians?

On what principle is the morality of that Epistle expressly based?

3. Describe the geographical position of Colossæ. What were the ethnological characteristics of that city?

4. What circumstances in our Lord's life appear to have left the deepest impression on St Peter?

On what points of Christian doctrine does he especially dwell?

5. How may St Peter's speeches in the Acts be used to illustrate his first Epistle?

6. Translate, explain, and illustrate the following words and phrases:—

ἀνταναπληρῶ τὰ ὑστερήματα τῶν θλίψεων τοῦ Χριστοῦ—ἐν μέρει ἑορτῆς—ἐν ἐθελοθρησκίᾳ καὶ ταπεινοφροσύνῃ [καὶ] ἀφειδίᾳ σώματος, οὐκ ἐν τιμῇ τινὶ πρὸς πλησμονὴν τῆς σαρκός—τὸν καιρὸν ἐξαγοραζόμενοι—τὴν ἐκ Λαοδικίας—εἰς ἃ ἐπιθυμοῦσιν ἄγγελοι παρακύναι—τὸ λογικὸν ἄδολον γάλα—φιμοῖν—ὑπογραμμὸν—μὴ φοβούμεναι μηδεμίαν πτόησιν—μὴ ξενίζεσθε τῇ ἐν ὑμῖν πυρώσει πρὸς πειρασμὸν ὑμῖν γινομένη—κατακυριεύοντες τῶν κλήρων.

7. Give the Greek original of the following passages:—

(a) Giving thanks unto the Father, which hath made us meet to be partakers of the inheritance of the saints in light; who hath delivered us from the power of darkness, and hath translated us into the kingdom of his dear Son; in whom we have redemption through his blood, even the forgiveness of sins.

(b) Lie not one to another, seeing that ye have put off the old man with his deeds; and have put on the new man, which is renewed in knowledge after the image of him that created him.

(c) Seeing ye have purified your souls in obeying the truth through the Spirit unto unfeigned love of the brethren, see that ye love one another with a pure heart fervently; being born again, not of corruptible seed, but of incorruptible, by the word of God, which liveth and abideth for ever.

(d) And above all things have fervent charity among yourselves: for charity shall cover the multitude of sins.

Discuss the reading in this place.

THURSDAY, *June 4*, 1885. 9—12.

HISTORY OF THE CHURCH TO THE DEATH OF LEO THE GREAT.

SPECIAL SUBJECT, LACTANTIUS DE MORTIBUS PERSECUTORUM.

1. TRACE the progress and decline of Jewish Christianity, specifying particularly (1) the form it assumed in its later developments, (2) the writings in which these later forms have come down to us.

2. Give a brief account of the Ante-Nicene Christian apologies, classing them according to the attitude they respectively assume towards heathen philosophy and culture.

3. Describe the penitential discipline of the Church in the first three centuries, marking distinctly the stages of its growth.

4. What do we know of Hippolytus? and what light does his history throw on the condition of the Church at Rome in his age?

5. Write a sketch of the schism of Felicissimus, and state what may be gathered from its history respecting the ecclesiastical constitution of the Churches of North Africa at the period.

6. Mention any conditions of heathen society which you regard as having hindered the progress of Christianity, down to the time of the edict of Gallienus.

7. Write a brief life of Origen, mentioning the names of the chief works written by him. In what light was he regarded by his contemporaries and those of the age immediately succeeding?

8. Translate and comment on

Inter cetera quae pro rei publicae semper commodis atque utilitate disponimus, nos quidem uolueramus antehac iuxta leges ueteres et publicam disciplinam Romanorum cuncta corrigere atque id prouidere ut etiam Christiani, qui parentum suorum reliquerant sectam, ad bonas mentes redirent. Siquidem quadam ratione tanta eosdem Christianos uoluntas inuasisset et tanta stultitia occupasset ut non illa ueterum instituta sequerentur quae forsitan primi parentes eorundem constituerant, sed pro arbitrio suo atque ut eisdem erat libitum, ita sibimet leges facerent quas obseruarent, et per diuersa uarios populos congregarent. Denique cum eiusmodi nostra iussio extitisset ut ad ueterum se instituta conferrent, multi periculo subiugati, multi etiam deturbati sunt; atque cum plurimi in proposito perseuerarent, ac uideremus nec diis eosdem cultum ac religionem debitam exhibere, nec Christianorum Deum obseruare, contemplationem mitissimae nostrae clementiae intuentes et consuetudinem sempiternam qua solemus cunctis hominibus ueniam indulgere, promptissimam in his quoque indulgentiam nostram credidimus porrigendam, ut denuo sint Christiani et conuenticula sua componant, ita ut ne quid contra disciplinam agant. Alia autem epistola iudicibus significaturi sumus quid debeant obseruare. Unde iuxta hanc indulgentiam nostram debebunt Deum suum orare pro salute nostra et rei publicae ac sua, ut undique uersum res publica perstet incolumis, et securi uiuere in sedibus suis possint.

9. Describe, with dates, the successive antichristian edicts in the persecution of Diocletian, and those which relaxed and ended it.

10. What grounds are there for attributing the book *De mortibus persecutorum* to Lactantius? Investigate its historical worth.

11. What were the real points at issue between the better sort of Donatists and the Church? Narrate briefly the proceedings of the Church with regard to them from the time of S. Augustine's consecration.

12. How far did the various successes and failures of the Arianising party between 325 and 381 depend upon the Court? How were its fortunes affected by the battle of Hadrianople?

13. Give an account of the life and labours of S. Basil the Great.

14. Narrate the chief steps in the series of events which led to the assembling of the Council of Chalcedon.

15. State accurately the claims made by, or on behalf of, the Roman See during the first 60 years of the 5th century. How far were they admitted by the Church at large?

THURSDAY, June 4, 1885. 1.30—4.30.

THE HISTORY OF CHRISTIAN DOCTRINE TO THE CLOSE OF THE COUNCIL OF CHALCEDON,

WITH SPECIAL REFERENCE TO THE ANCIENT CREEDS AND OTHER ORIGINAL AUTHORITIES.

1. "WHAT was [to many Christians] only a redemption in the moral or religious sense is in the Gnostic systems the restoration and completion of the entire order of the world.'

Illustrate and examine this statement with reference to any one Gnostic system; and trace the effects of this view upon the doctrine of any one ecclesiastical writer of the second or third century.

2. Give an account of the teaching of Hermas on repentance, and sketch briefly the course of the controversies arising out of this subject in the second and third centuries.

3. Write out the Roman Creed in its earliest known form, pointing out the differences from the form preserved by Rufinus. What are the sources from which it is known to us, and the marks by which its antiquity is inferred? Discuss on historical grounds the priority of 'flesh' or 'body' in the article on the Resurrection.

4. Compare the teaching of Irenæus and Tertullian (*Adversus Praxean*) respecting the Holy Spirit.

Translate and explain the drift of the following passage:—

Hac lege fidei manente cetera jam disciplinae et conversationis admittunt novitatem correctionis operante scilicet et proficiente usque in finem gratia Dei. Quale est enim ut diabolo semper operante et adiciente cottidie ad iniquitatis ingenia opus Dei aut cessaverit aut proficere destiterit, cum propterea paracletum miserit Dominus ut, quoniam humana mediocritas omnia semel capere non poterat, paulatim dirigeretur et ordinaretur et ad perfectum perduceretur disciplina ab illo vicario Domini Spiritu sancto?

5. Translate and explain the following passage of Hippolytus:—

Ἄλλ' ἐρεῖ μοί τις Ξένον μοι φέρεις λόγον λέγων υἱόν. * * * Ὁρᾶτε, ἀδελφοί, πῶς ἐν συμβόλῳ τὸ ἱμάτιον τὸ ἐρραντισμένον αἵματι (Αποκ. xix. 13) τὴν σάρκα διηγῆσατο, δι' ἧς καὶ ὑπὸ πάθος ἦλθεν ὁ ἀπαθὴς τοῦ θεοῦ λόγος. * * * ποῖον οὖν γίον ἐάτο; ὁ θεὸς διὰ τῆς σαρκὸς κατέπεμψεν (Rom. viii. 3) ἄλλ' ἢ τὸν λόγον, ὃν υἱὸν προσηγόρευε διὰ τὸ μέλλειν αὐτὸν γενέσθαι;

What considerations brought into prominence the idea of Divine Sonship antecedent to the Incarnation in addition to the idea of the Word, and what were the obstacles to its reception? How was this question dealt with by Origen?

6. Translate

Τοῦτον πιστεύομεν σὺν τῷ πατρὶ αἰεὶ ὄντα ἐκπεληρωμέναι τὸ πατρικὸν βούλημα πρὸς τὴν κτίσιν τῶν ὅλων. * * * πάντα δι' αὐτοῦ καὶ εἰς αὐτὸν ἐκτίσται, οὕτω δὲ ὡς ἀληθῶς ὄντος καὶ ἐνεργούντος, ὡς λόγου ἅμα καὶ θεοῦ δι' οὗ ὁ πατὴρ πάντα πεποίηκεν, οὐχ ὡς δι' ὄργανον οὐδ' ὡς δι' ἐπιστήμης ἀνυποστάτου γεννήσαντος μὲν τοῦ πατρὸς τὸν υἱὸν ὡς ζῶσαν ἐνέργειαν καὶ ἐνυπόστατον, ἐνεργοῦντα τὰ πάντα ἐν πάσιν· οὐχὶ βλέποντος δὲ μόνον οὐδὲ παρόντος μόνον τοῦ υἱοῦ, ἀλλὰ καὶ ἐνεργούντος πρὸς τὴν τῶν ὅλων δημιουργίαν, ὡς γέγραπται Ἦμην παρ' αὐτῷ ἀρμόζοντα.

From what writing is this passage taken, and against what doctrines is it directed? What are the extant sources of information about the controversy to which it belongs?

7. Translate not more than ten of the following terms, with illustrative notes:—

ἀνακεφαλαίωσις, αὐτοδύναμις, ἔκστασις, ἐμπολιτεύομαι, ἐμφύσημα, ἐνδιάθετος, θεολογέω, καταμερίζω, μάθημα, ὅρος, οὐσιοῦμαι, πλατύνω, προβολή, προκοπή, πρόσωπον, πύρινος θεός, συνάφεια, ὑστέρημα, φυλοκρίνησις, φυσικαὶ ἔννοιαι.

8. Write a brief history of the term *ὁμοούσιος* down to the time of the Nicene Council. State (1) on what grounds the adoption of the term was pressed, (2) on what grounds it was resisted, and (3) how far the history of the succeeding half century tends to establish the fitness of the term for expressing the doctrine intended.

9. Translate

ὥς ἄρα θέλων ὁ θεὸς τὴν γενητὴν κτίσαι φύσιν, ἐπειδὴ ἑώρα μὴ δυναμένην αὐτὴν μετασχεῖν τῆς τοῦ πατρὸς ἀκράτου χειρὸς καὶ τῆς παρ' αὐτοῦ δημιουργίας, ποιεῖ καὶ κτίζει πρῶτως μόνος μόνον ἓνα καὶ καλεῖ τοῦτον υἱὸν καὶ λόγον, ἵνα τούτου μέσου γενομένου οὕτως λοιπὸν καὶ τὰ πάντα δι' αὐτοῦ γενέσθαι δυνηθῇ.

How far is this a fair description of the views of Arius?

10. What was the character of the synod at which the following words formed part of the creed drawn up?

καὶ εἰς ἓνα κύριον Ἰησοῦν Χριστόν, τὸν υἱὸν αὐτοῦ, τὸν μονογενῆ θεόν, δι' οὗ τὰ πάντα ἐγένετο· τὸν γεννηθέντα πρὸ πάντων τῶν αἰώνων ἐκ τοῦ πατρὸς, θεὸν ἐκ θεοῦ, ὅλον ἐξ ὅλου, μόνον ἐκ μόνου, τέλειον ἐκ τελείου, βασιλέα ἐκ βασιλέως, κύριον ἀπὸ κυρίου, λόγον ζῶντα, σοφίαν, ζῶν, φῶς ἀληθινόν, ὁδὸν ἀληθείας, ἀνάστασιν, ποιμένα, θύραν, ἀτρεπτόν τε καὶ ἀναλλοίωτον, τὴν τῆς θεότητος οὐσίας τε καὶ δυνάμεως καὶ βουλῆς καὶ δόξης τοῦ πατρὸς ἀπαράλλακτον εἰκόνα, τὸν πρωτότοκον πάσης κτίσεως, τὸν ὄντα ἐν ἀρχῇ πρὸς τὸν θεὸν λόγον θεοῦ κατὰ τὸ εἰρημένον ἐν τῷ εὐαγγελίῳ Καὶ θεὸς ἦν ὁ λόγος. δι' οὗ τὰ πάντα ἐγένετο, καὶ ἐν ᾧ τὰ πάντα συνέστηκε.

Discuss the orthodoxy of this formula from the Nicene point of view, and the reason of its non-reception by the party of Athanasius.

11. State accurately the doctrine of Apollinaris concerning the Logos. In what tendencies did it originate, and by whom and on what grounds was it opposed?

12. What is meant by the doctrine of the *communicatio idiomatum* in Christ? How was it proposed in the fifth century to reconcile this doctrine with the progressive enlightenment of His human soul?

13. What was the question at issue between Augustine and Pelagius? On what grounds did the former (1) deny the freedom of the will, (2) assert the necessity of Divine grace?

14. Describe the Eucharistic doctrine of either Gregory of Nyssa or one of the two Cyrils, and compare it with that of one Father of the second century.

THEOLOGICAL TRIPOS.

PART II.

SECTION I. OLD TESTAMENT.

FRIDAY, *June* 5, 1885. 9—12.

ISAIAH.

1. GIVE an account of the foreign politics of the kingdom of Judah during the reigns of Ahaz and Hezekiah, illustrating your account from the prophet Isaiah.

2. Compare the Messianic idea as contained in Isaiah i—xxxix with that contained in Isaiah xl—lxvi.

3. "As the subject requires he (Isaiah) has readily at command every several kind of style and every several change of delineation."

Discuss and illustrate this statement.

4. What, judging from the book of the prophet Isaiah alone, were the functions of the Hebrew Prophet?

5. Point, adding the pause accents,

(a) יהוה אלהי אתה ארוממך אודה שמך כי עשית פלא עצות מרחק
אמונה אמן : כי שמת מעיר לגל קריה בצורה למפלה ארמן זרים מעיר לעולם
לא יבנה : על כן יכבדוך עם עז קרית גוים עריצים ייראוך : כי היית מען
לדל מען לאביון בצר לו מחסה מורם צל מחרב כי רוח עריצים כורם קיר :
בחרב בציון שאון זרים תבניע חרב בצל עב זמיר עריצים יענה : ועשה יהוה
צבאות לכל העמים בהר הזה משתה שמנים משתה שמרים שמנים ממחים שמרים
מוקקים : ובלע בהר הזה פני הלום הלום על כל העמים והמסכה הנסוכה על
כל הגוים : בלע המות לנצח ומחה אדני יהוה דמעה מעל כל פנים וחרפת עמו
יסיר מעל כל הארץ כי יהוה דבר : ואמר ביום ההוא הנה אלהינו זה קוינו לו
יושיענו זה יהוה קוינו לו נגילה ונשמחה בישועתו :

(b) הוּי כָל צִמָּא לָכוּ לָמִים וְאִשֶּׁר אֵין לוֹ כֶּסֶף לָכוּ שִׁבְרוּ וְאָכְלוּ וּלְכוּ שִׁבְרוּ בְּלוֹא כֶּסֶף וּבְלוֹא מַחִיר יֵין וְחֶלֶב : לָמָּה תִשְׁקְלוּ כֶּסֶף בְּלוֹא לֶחֶם וַיִּגְעַכְכֶּם בְּלוֹא לִשְׁבַעָה שִׁמְעוּ שִׁמְעוּ אֵלַי וְאָכְלוּ טוֹב וְתִתְעַנֵּג בְּדִשָּׁן נֶפֶשְׁכֶּם : הִמּוּ אֹזְנְכֶם וּלְכוּ אֵלַי שִׁמְעוּ וְתָחִי נֶפֶשְׁכֶּם וְאִבְרַתָּה לָכֶם בְּרִית עוֹלָם חֲסִדֵי דָוִד הַנֶּאֱמָנִים : הֵן עַד לְאוֹמִים נִתְּנִי נְגִיד וּמִצְוָה לְאֻמִּים : הֵן גּוֹי לֹא תִרְעַתְּ תִקְרָא וְגוֹי לֹא יִדְעוֹךְ אֱלֹהֶיךָ יִרְצוּ לִמְעַן יִהְיֶה אֱלֹהֶיךָ וּלְקִדּוֹשׁ יִשְׂרָאֵל כִּי פֶאֶרְךָ : דִּרְשׁוּ יִהְיֶה בְּהִמְצָאוֹ קִרְאוֹהוּ בְּהִיוֹתוֹ קְרוֹב : יַעֲזֹב רִשְׁעֵי דְרָכּוֹ וְאִישׁ אֶחָד מִחֲשַׁבְתּוֹ וְיֵשֶׁב אֶל יִהְיֶה וְיִרְחַמְהוּ וְאֵל אֱלֹהֵינוּ כִּי יִרְבֶּה לְסֻלּוֹ :

6. Give the original Hebrew corresponding to

(a) And it shall come to pass in the last days, that the mountain of the LORD's house shall be established in the top of the mountains, and shall be exalted above the hills; and all nations shall flow unto it. And many people shall go and say, Come ye, and let us go up to the mountain of the LORD, to the house of the God of Jacob; and he will teach us of his ways, and we will walk in his paths: for out of Zion shall go forth the law, and the word of the LORD from Jerusalem.

(b) Thou wilt keep him in perfect peace, whose mind is stayed on thee: because he trusteth in thee. Trust ye in the LORD for ever: for in the LORD JEHOVAH is everlasting strength.

(c) Who is this that cometh from Edom, with dyed garments from Bozrah? this that is glorious in his apparel, travelling in the greatness of his strength? I that speak in righteousness, mighty to save. Wherefore art thou red in thine apparel, and thy garments like him that treadeth in the winefat? I have trodden the winepress alone; and of the people there was none with me: for I will tread them in mine anger, and trample them in my fury; and their blood shall be sprinkled upon my garments, and I will stain all my raiment.

7. Translate and explain, and where necessary connect with the context:

(a) חִדְלִי לָכֶם מִן־הָאָדָם אֲשֶׁר נִשְׁמָה בְּאָפוֹ בִּיבְמָה נִחְשָׁב דָּוָא :

(b) וְהָיָה בַּיּוֹם הַהוּא יִחְיֶה־אִישׁ עֲנִילַת בָּקָר וְשִׁתִּי־צֹאן : וְהָיָה מֶרֶב

עֲשׂוֹת חֶלֶב יֹאכֵל חֲמָאָה בִּיחְמָאָה וְדִבֵּשׁ יֹאכֵל פְּלִדְנוֹתָר בְּקֶרֶב הָאָרֶץ :

(c) פֶּלֶם־מַלְכִי גוֹיִם פָּלָם שָׁכְנוּ בְּכָבוֹד אִישׁ בְּבֵיתוֹ : וְאֵתָה הַשְׁלֵכָהּ

מִקְבָּרָךְ בְּנֶצֶר נִתְּעַב לְבֶשׂ הָרָגִים מִטַּעְנֵי חֶרֶב יוֹרְדֵי אֶל־אֲבִיבּוֹר כְּפָנֶיךָ מִבֶּסֶם :

(d) שְׁלַחְכֶם מִשְׁלֵ-אֶרֶץ מִסְלַע מִדְבָּרָה אֶל־הַר בְּתִצִּיחַ :

(e) בִּרְתַנְחָה יִדְיָהוּהָ בָּדַר הָזָה וְנִדְלָשׁ מוֹאֵב תַּחֲתָיו בְּהִדְלָשׁ מִתְּבֵן בְּמִי
מִדְמָנָה : וּפִרְשׁ יָדָיו בְּקִרְבּוֹ בְּאִשֶּׁר יִפְרֹשׁ הַשָּׁחָה לְשָׁחוֹת וְהַשְׁפִּיל נֶאֱתָנוּ עִם
אֲרֻבוֹת יָדָיו : וּמִבְצָר מִשְׁצָב חוֹמֹתָיִךְ הַשָּׁחַ הַשְׁפִּיל הִגִּיעַ לְאֶרֶץ עַד־עֶפְרָיִם :
• בְּמוֹ קָרִי •

(f) וּמִצָּרִים הִבֵּל וְרִיק יַעֲזֹרוּ לָכֵן קָרָאתִי לְזֹאת רַחֲבֵה הִם שָׁבֹת :

(g) עֲמַדֵּי־נָא בַּחֲבִירָיִךְ וּבִרְבִּי בִּשְׁפָיִךְ בְּאִשֶּׁר יִנְעַת מְנַעֲדָיִךְ אֵלַי תִּגְבְּלִי
הוֹעֵל אֵלַי תַּעֲזֹצִי : נִלְאִית בִּרְבִּי עֲצָתְיִךְ יַעֲמֹד־נָא וְיִשְׁיַעֲךָ הַבְּרִי שָׁמַיִם רַחֲוִים
בְּנוֹכְבִּים מוֹדִיעִים לְחִדְשִׁים מִאִשֶּׁר יִבְאֵא עֲלֶיךָ : הִנֵּה הָיוּ כִקֵּשׁ אִישׁ שְׂרָפְתָם
לֹא־יֵצִילוּ אֶת־נַפְשָׁם מִיַּד לְהִבָּה אֵין־נִחַלֶת לְחֵמָם אִדּוּ לְשָׁבֹת נִגְדּוּ :
• הַבְּרִי קָרִי •

(h) סֹדְרוֹ סֹדְרוֹ צִאָּה מִשָּׁם טָמֵא אֶל־תִּנְעֹנוּ צִאָּה מִתּוֹכָהּ הַבְּרִי נִשְׁאִי כָּלִי
יְדוּהָ : כִּי לֹא בַחֲפוּזוֹן תִּצָּאָה וּבְמִנְסָה לֹא תִלְכּוֹן כִּי־דִלְגָךְ לְפָנֶיכֶם יְדוּהָ
וּמִאֲפֻכָם אֱלֹהֵי יִשְׂרָאֵל :

(i) כִּי־אֵתָה אֲבִינוּ כִּי אֲבָרְדָם לֹא יִדְעֵנוּ וְיִשְׂרָאֵל לֹא יִכִּידֵנוּ אֵתָה יְדוּהָ
אֲבִינוּ נֶאֱלָנוּ מִעוֹלָם שְׁמֶךָ : לָמָּה תִתְּנֵנוּ יְדוּהָ מִדְּרָכֶיךָ תִקְשִׁיחַ לִבֵּנוּ מִי־אֵתָה
שָׁב לִמְעַן עֲבֹדֶיךָ שְׁבִטִי נִחַלְתָּךְ : לִפְעֻעַר יִדְשׁוּ עִם־קֹדֶשְׁךָ צָרִינוּ בּוֹסְסִי
מִקֹּדֶשְׁךָ : הָיִינוּ מִעוֹלָם לֹא־מִשְׁלָתָ בָּם לֹא־נִקְרָא שְׁמֶךָ עֲלֵיהֶם לֹא־קָרַעַת שָׁמַיִם
יִרְדֶּת מִפְּנֵיךְ הָרִים נִזְלוּ :

SECTION I. OLD TESTAMENT.

FRIDAY, June 5, 1885. 1.30—4.30.

A.

PSALMS. BOOK I.

1. "THE Inscriptions of the Psalms are like the Subscriptions to the Epistles of the New Testament. They are not of any necessary authority, and their value must be weighed and tested by the usual critical processes."

Discuss this statement, and examine particularly the evidence of the LXX. translation.

2. Compare the doctrine of God in His relations with mankind as contained in this book of the Psalms with that contained in the book of Job.

or

Discuss David's position with respect to the doctrine of the life after death.

3. Paraphrase without translating the following, adding short notes:—

(a) נִשְׁקוּ-בְרַךְ פֶּן-יֵאָנֵף וְתֹאכְרוּ דָרֶךְ בִּי-יִבְעַר בְּמַעַט אֲפֹ אֲשֶׁרִי כָל-חֹסִי בּוֹ :

(b) רִנּוֹ וְאַל-תִּחַמָּא אֲמְרוּ בְלִבְבְּכֶם עַל-מִשְׁפַּבְּכֶם וְדַמּוּ סֵלָה :

(c) וַעֲדַת לְאֻמִּים תִּסּוּבְכֶךָ וְעֲלִיָּה לְמָרוֹם שׁוּבָה :

(d) כִּי הִשְׁתַּחֲוֹת יִהְיֶה צִדִּיק מִהֲפָעַל :

(e) יְהוָה לִמְבוֹל יֵשֶׁב וַיֵּשֶׁב יְהוָה מֶלֶךְ לְעוֹלָם :

4. Translate, with careful notes:

(a) מִהֲאֵלֶּשׁ כִּי-תִזְכְּרֶנּוּ וְכִן-אָדָם כִּי תִפְקְדֶנּוּ : וְתִחַפְּדֶנּוּ מַעַט מֵאֲלֹהִים

וְכָבוֹד וְהָדָר תִּעֲשֶׂהֶנּוּ :

Discuss the LXX. translation here.

(b) 9 יֵאָרֵב בְּמִסְתֵּר בְּאֵרֶיהָ בְּסִפָּהּ יֵאָרֵב לְחִטּוֹף עֲנִי יִחַטֵּף עֲנִי בְּמִשְׁכּוֹ

בְּרִשְׁתּוֹ : 10 וְדָבָה יֵשֶׁחַ וְנָפַל בְּעֵצוֹמָיו חֲלָפָאִים :

Point and translate כתיב in v. 10.

(c) מִשֹּׁר עֲנִיִּים מֵאֲנִקַּת אֲבִיוֹנִים עֲתָה אֲקוּם יֹאמֶר יְהוָה אִשִּׁית בְּיֵשֶׁעַ

יִפִּיתָ לוֹ : אֲמָרוֹת יְהוָה אֲמָרוֹת מְדֻרּוֹת בְּסָף צָרוֹף בְּעֵלִיל לְאֶרֶץ מִזָּקָן

שִׁבְעָתִים :

(d) כִּי רָגַע בְּאֶפֶס חַיִּים בְּרִצּוֹנוֹ בְּעֶרְבַּי לֵין בְּכִי וּלְפָנֶיךָ רָגָה :

(e) רַבּוֹת עֲשִׂיתָ אִתָּהּ יְהוָה אֱלֹהֵי נַפְלְאוֹתֶיךָ וּמַחְשַׁבְתֶּיךָ אֱלֹהֵינוּ אֵין עֲדָךְ
אֱלֹהֶיךָ אֲנִידָה וְאִדְבָּרָה עֲצָמוֹ מִסִּפֵּר : זָבַח וּמִנְחָה לֹא חָפְצָתָ אֲזָנִים בְּרִית לִי
עוֹלָה וְחִטָּאָה לֹא שְׁאֵלָתָ : אִן אֲמַרְתִּי הִנֵּה-בָאתִי בְּמִגְלַת-סִפֵּר כְּתוּב עָלַי :
לַעֲשׂוֹת-דִּצּוֹנְךָ אֱלֹהֵי חֲפָצָתִי וְתוֹרַתְךָ בְּתוֹךְ מִעִי :

Discuss the LXX translation and the use of the passage in the Epistle to the Hebrews.

(f) Ὡς πλησίον ὡς ἀδελφὸν ἡμέτερον οὕτως εὐηρέστουν, ὡς πενθῶν καὶ σκυθρωπάζων οὕτως ἐταπεινούμην. Καὶ κατ' ἐμοῦ εὐφράνθησαν καὶ συνήχθησαν ἐπ' ἐμὲ μάστιγες καὶ οὐκ ἔγνω. διεσχίσθησαν καὶ οὐ κατενύγησαν. Ἐπεί-
ρασάν με, ἐξεμυκτήρισάν με μυκτηρισμὸν, ἔβρυξαν ἐπ' ἐμὲ τοὺς ὀδόντας αὐτῶν.

(g) Ἐν ἐλεγμοῖς ὑπὲρ ἀνομίας ἐπαίδευσας ἄνθρωπον καὶ ἐξέτηξας ὡς ἀράχην τὴν ψυχὴν αὐτοῦ, πλὴν μάρτην ταρασσεται πᾶς ἄνθρωπος διάψαλμα.

5. Discuss critically and account for the LXX addition to Psalm xiv.

or

Determine on critical grounds the original text in Psalm xxii. 17, "בְּאֵרִי".

6. Give the original Hebrew corresponding to

(a) I have set the LORD always before me: because he is at my right hand, I shall not be moved. Therefore my heart is glad, and my glory rejoiceth: my flesh also shall rest in hope. For thou wilt not leave my soul in hell; neither wilt thou suffer thine Holy One to see corruption. Thou wilt shew me the path of life: in thy presence is fulness of joy; at thy right hand there are pleasures for evermore.

(b) O taste and see that the LORD is good: blessed is the man that trusteth in him. O fear the LORD, ye his saints: for there is no want to them that fear him. The young lions do lack, and suffer hunger: but they that seek the LORD shall not want any good thing. Come, ye children, hearken unto me: I will teach you the fear of the LORD. What man is he that desireth life, and loveth many days, that he may see good? Keep thy tongue from evil, and thy lips from speaking guile.

7. Point

אֵל תִּסְתֵּר פָּנֶיךָ מִמֶּנִּי אֵל תֵּם בְּאֵף עֲבָדְךָ עֲזַרְתִּי הֵייתָ אֵל תִּמְשָׁנִי וְאֵל
תַּעֲזֹבֵנִי אֱלֹהֵי יִשְׁעִי : כִּי אָבִי וְאִמִּי עֲזֹבוּנִי וַיְהִי יִאֲסָפֵנִי : הוֹרֵנִי יְהוָה דְּרֹכְךָ
וְנִחַנִּי בְּאֵרֶחַ מִישׁוֹר לְמַעַן שְׂרָדִי : אֵל תִּתְּנֵנִי בְּנֶפֶשׁ צָרִי כִּי קָמוּ בִי עָדִי שִׁקָּר וַיִּפַּח
חֶמֶם : לֹלֵא הָאֲמַנְתִּי לְדֹאוֹת בְּמוֹב יְהוָה בְּאֶרֶץ חַיִּים : קוּה אֵל יְהוָה חֹזֶק
וַיֵּאֱמֶן לְבָבְךָ וְקוּה אֵל יְהוָה :

B.

Candidates are requested not to answer more than two out of the first three questions.

HAGGAI. ZECHARIAH. MALACHI.

1. POINT out the Apocalyptic elements in the prophecies after the Exile. How is Haggai connected by tradition, or otherwise, with some other books of the Old Testament?

2. State (not discussing) the grounds on which some have thought the prophecies of Zechariah to be not all productions of the same writer. Explain the teaching of Zechariah's vision concerning Joshua the high priest.

3. Give examples of New Testament thoughts and expressions anticipated in these prophecies.

What are the three chief sins which call forth Malachi's reproof, and how is their prevalence at this time indicated in the contemporary historical books?

4. Translate, with notes grammatical and exegetical,

(a) הָעָם הָיָה אֹמְרוֹ לֹא עָתִידָא עֲתִידָא יְהוָה לְהַבְנוֹת :

(b) הֵן יֵשׁוּא־אִישׁ בְּשֵׁר-קֶרֶשׁ בְּכִנָּף בְּנִדּוֹ וְנָנַע בְּכִנְפוֹ אֶל-הַלֶּחֶם וְאֶל-הַנֶּחֱדָר

וְאֶל-הַיֵּין וְאֶל-שֶׁמֶן וְאֶל-כָּל-מִאֲכָל הַיִּקְדֹּשׁ וַיַּעֲנוּ הַכֹּהֲנִים וַיֹּאמְרוּ לֹא : וַיֹּאמֶר חַיִּי

אֲסִינַע טַמְאֵנֶפֶשׁ בְּכָל-אֵלֶּה הַיִּטְמָא וַיַּעֲנוּ הַכֹּהֲנִים וַיֹּאמְרוּ יִטְמָא :

Point out the application of these two parables.

(c) הוּא צִיּוֹן הַמִּלְטָה יִשְׁכַּבַּת בַּת-בָּבֶל : כִּי כֹה אָמַר יְהוָה צְבָאוֹת אֲחֵר

בְּבוֹד שְׁלַחְנִי אֲלֵדְבוּרִים הַשְׁלָלִים אֶתְכֶם כִּי הִצַּנְתֶּם בְּכֶם נֹנֵעַ בְּבִבְתָּ עֵינֵי :

(d) כֹּה-אָמַר יְהוָה צְבָאוֹת אֱלֹהֵי-יִשְׂרָאֵל תִּלְךָ וְאִם אֶת-מִשְׁמְרָתִי תִשְׁמֹר

וְגַם-אֶתָּה תִּדְרֹן אֶת-בֵּיתִי וְגַם תִּשְׁמֹר אֶת-חֻצְרִי וְנִתְתִּי לְךָ מִהַלְכִים בֵּין הָעֹמְדִים הָאֵלֶּה :

(e) שׁוּבוּ לְבִצְחוֹן אֲסִירֵי הַתְּקוּהָ גַם-דְּהִיּוֹם מִנִּיד מִשְׁנָה אֲשִׁיב לְךָ : כִּי-

יִדְבַּקְתִּי לִי יְהוּדָה קֶשֶׁת מִלְּאִתִּי אֲפָרִים וְעוֹרֹרְתִי בְּנִיד צִיּוֹן עַל-בְּנִיד יוֹן וְשִׁמְתִּיד בְּחֶרֶב גְּבוּר :

(f) וְכִי-תִגְיֹשׁן עַד לִזְבַּח אֵין דָּע וְכִי תִגְיֹשׁ פֶּסֶח וְחִלָּה אֵין דָּע הַקְרִיבֶהוּ

כֹּא לְפִתְתִּיד הַיִּדְבָּק אוֹ הַיֵּשׁא פְּנִיד אָמַר יְהוָה צְבָאוֹת : וְעַתָּה חֲלוּ-נָא פְּנִי-אֵל

וְחַנְנֵה מִיָּדְכֶם הַיְּתָה זֹאת הַיֵּשׁא מִכֶּם פְּנִים אָמַר יְהוָה צְבָאוֹת : מִי גַם-בְּכֶם

וְיִסְגֵּר דְּלָתִים וְלֹא-תִאֲוִירוּ מִזִּבְחִי חֵנֶם אֵין-לִי חֶפֶץ בְּכֶם אָמַר יְהוָה צְבָאוֹת וּמִנְחָה

לֹא-אֲרָצָה מִיָּדְכֶם :

(g) וְהָיוּ לִי אֹמְרֵי יְהוָה צְבָאוֹת לַיּוֹם אֲשֶׁר אֲנִי עֹשֶׂה סִנְלָה וְחִמְלָתִי עֲלֵיהֶם

כֹּאֲשֶׁר יִחְמַל אִישׁ עַל-בְּנוֹ הַעֲבֹד אֹתוֹ :

5. Comment on the following renderings of the LXX., giving the original where you can:—

τὰ ἐκλεκτὰ πάντων τῶν ἐθνῶν—τὸν λίθον τῆς κληρονομίας—Ἀρβασεὲρ ὁ βασιλεὺς—κύριος ἐποίησε φαντασίας—ἐν θαλάσῃ στενῇ—ταῦτα ἐκ κακοπαθείας ἐστὶ—ὕμεις οἱ υἱοὶ Ἰακώβ οὐκ ἀπέχεσθε ἀπὸ τῶν ἀδικιῶν τῶν πατέρων ὑμῶν.

6. Write notes on the following words or expressions:—

מְלָאכָה, נְאֻם־יְהוָה, הִלּוֹ, פְּרוֹזוֹת, הַשְׁמָן, הַתְּרָפִים, הַקִּסְמִים, רָעִי הָאֵלִיל.

υἱοὶ τῆς πιότητος. σχοίνισμα. λῆμμα λόγου κυρίου. ἡ θάλασσα ἡ πρώτη. οἱ ἀλλογενεῖς.

7. Point, translate, and explain the construction of

(a) מִי בָכֶם הַנִּשְׁאָר אֲשֶׁר רָאָה אֶת הַבַּיִת הַזֶּה בְּכַבּוּדוֹ הָרִאשׁוֹן וְמָה

אַתֶּם רֹאִים אֹתוֹ עַתָּה הֲלוֹא כְּמֹהוּ כֹּאֲן בְּעֵינֵיכֶם :

(b) וְאָמַר לֹא אֶרְעָה אֶתְכֶם הַמָּתָה תְּמוֹת וְהַנִּכְחַדַּת תִּכְחַד וְהַנִּשְׁאָרוֹת

תֹּאכְלֶנָּה אִשָּׁה אֶת בֶּשֶׂר רַעוּתָהּ :

(c) וְאָרֹר נֹכַח וַיֵּשׁ בַּעֲדָרוֹ זָכָר וְנָדָר חֲבָה מִשְׁחַת לְאֲדָנִי כִּי מֶלֶךְ גָּדוֹל

אֲנִי אֹמַר יְהוָה צְבָאוֹת וְשְׁמִי נֹרָא בְּנוֹיִם :

8. Retranslate

Therefore say thou unto them, Thus saith the LORD of hosts; Turn ye unto me, saith the LORD of hosts, and I will turn unto you, saith the LORD of hosts. Be ye not as your fathers, unto whom the former prophets have cried, saying, Thus saith the LORD of hosts; Turn ye now from your evil ways, and from your evil doings: but they did not hear, nor hearken unto me, saith the LORD. Your fathers where are they? and the prophets, do they live for ever? But my words and my statutes, which I commanded my servants the prophets, did they not take hold of your fathers? and they returned and said, Like as the LORD of hosts thought to do unto us, according to our ways, and according to our doings, so hath he dealt with us.

SECTION I. OLD TESTAMENT.

SATURDAY, June 6, 1885. 9—12.

TRANSLATION FROM THE HEBREW OLD TESTAMENT AND
HEBREW COMPOSITION.

1. TRANSLATE with notes:

(a) וַיֵּצֵא מֹשֶׁה לִקְרֹאת חֹתְנוֹ וַיִּשְׁתַּחֲוֶה וַיִּשְׁקָלוּ וַיִּשְׁאַלּוּ אִישׁ לְרֵעֵדוֹ
לְשָׁלוֹם וַיָּבֹאוּ הָאֱהָלָה : וַיֹּסֶפֶר מֹשֶׁה לְחֹתְנוֹ אֵת כָּל-אֲשֶׁר עָשָׂה יְהוָה לְפָרְעֹה
וּלְמִצְרַיִם עַל אֹדֶת יִשְׂרָאֵל אֵת כָּל-הַתִּלְאָה אֲשֶׁר מִצְרַתָּם בְּדֶרֶךְ וַיֵּצֵא יְהוָה :
וַיַּחַד יִתְּרוֹ עַל כָּל-הַטּוֹבָה אֲשֶׁר-עָשָׂה יְהוָה לְיִשְׂרָאֵל אֲשֶׁר הִצִּילוֹ מִיַּד מִצְרַיִם :
וַיֹּאמֶר יִתְּרוֹ בְּרוּךְ יְהוָה אֲשֶׁר הִצִּיל אֶתְכֶם מִיַּד מִצְרַיִם וּמִיַּד פָּרְעֹה אֲשֶׁר הִצִּיל
אֶת-הָעָם מִתַּחַת יַד-מִצְרַיִם : עַתָּה יָדַעְתִּי כִּי-גָדוֹל יְהוָה מִכָּל-הָאֱלֹהִים כִּי בִדְבַר
אֲשֶׁר זָרָה עֲלֵיהֶם :

(b) לֹא-תִפְטַע לָךְ אִשְׁרָה כָּל-עֵץ אֵצֶל מִזְבֵּחַ יְהוָה אֱלֹהֶיךָ אֲשֶׁר תַּעֲשֶׂה-לָּךְ :
וְלֹא-תִקֵּים לָךְ מִצְבֵּה אֲשֶׁר שָׁנָא יְהוָה אֱלֹהֶיךָ :

(c) וְהָקִים יְהוָה לוֹ מֶלֶךְ עַל-יִשְׂרָאֵל אֲשֶׁר יִכְרִית אֶת-בֵּית יִרְבֶּעָם זֶה
הַיּוֹם וְזֶה גַם-עַתָּה : וְהָכֵה יְהוָה אֶת-יִשְׂרָאֵל כַּאֲשֶׁר יִגְדֹר הַקֶּנֶה בַּיָּמִים וְנָתַשׁ
אֶת-יִשְׂרָאֵל מֵעַל הָאֲדָמָה הַטּוֹבָה הַזֹּאת אֲשֶׁר נָתַן לַאֲבוֹתֵיהֶם וְזָרָם מֵעֵבֶר לַנָּהָר
יַעַן אֲשֶׁר עָשׂוּ אֶת-אֲשֵׁרֵיהֶם מִכַּעֲסִים אֶת-יְהוָה : וַיִּתֵּן אֶת-יִשְׂרָאֵל בְּגִלְל הַטָּאוֹת
יִרְבֶּעָם אֲשֶׁר חָטָא וְאֲשֶׁר הִחְטִיא אֶת-יִשְׂרָאֵל :

(d) שִׁמְעוּ הַדְּבָר הַזֶּה פְּרוֹת הַבָּשָׂן אֲשֶׁר בְּהַר שִׁמְרוֹן הַעֲשֻׁקוֹת דִּלִּים
הַרְצִיחוּ אֲבִיוֹנִים הָאֲמֵרוֹת לְאֲדֹנֵיהֶם הַבִּיאוּהָ וְנִשְׁמָה : נִשְׁבַּע אֲדָנִי יְהוָה בְּקִדְשׁוֹ
כִּי הִנֵּה יָמִים בָּאִים עֲלֵיכֶם וְנִשְׂאָ אֶתְכֶם בַּצָּנוֹת וְאֶחָדֵיכֶם בְּסִירוֹת דֹּגָה :
וּפְרָצִים תִּצָּאָה אִשָּׁה נִגְרָה וְהִשְׁלַכְתָּהּ הַהַרְמוֹנָה נֹאם-יְהוָה : בָּאָה בֵּית-אֵל

וַפִּשְׁעוֹ הַגָּלוּל הִרְבּוּ לַפֶּשַׁע וְהִבִּיאוּ לַפֶּקֶר וּבְחִיכָם לִשְׁלֶשֶׁת יָמִים מַעֲשֵׂרֵתֵיכֶם :
וְקֹפֶר מִחֶמֶן תּוֹדָה וְקִרְא נְדָבוֹת הַשְּׁמִיעוּ כִּי כֵן אֶהְבֶּתֶם בְּנֵי יִשְׂרָאֵל נָא
אֲדֹנִי יְהוָה :

(e) כֹּה אָמַר יְהוָה עַל־הַנְּבִיאִים הַמְתַּעִים אֶת־עַמִּי הַנְּשָׁכִים בַּשְּׂנִידִם
וְקִרְא שָׁלוֹם וְאִשָּׁר לֹא־יִתֵּן עַל־פִּידֵם וְקִדְּשׁוּ עָלָיו מִלְחָמָה : לָכֵן לִילָה לָכֶם
מִחוּזֹן וְחִשְׁכָה לָכֶם מִקֶּסֶם וּבָאָה הַשְּׁמֵשׁ עַל־הַנְּבִיאִים וְקִדְּרָה עֲלֵיהֶם הַיּוֹם :
וּבִשְׁנֵי הַחֳזִים וְחִפְרוּ הַקֶּסֶמִים וְעָטוּ עַל־שָׁפֶם כָּלֶם כִּי אֵין מַעֲנֶה אֱלֹהִים :
וְאֹלָם אֲנֹכִי מִלֵּאֲתִי כֹחַ אֶת־דַּחַח יְהוָה וּמִשְׁפָּט וּנְבוּדָה לְהַגִּיד לַיעֲקֹב פֶּשַׁעוֹ
וּלְיִשְׂרָאֵל חַטָּאתוֹ :

(f) נָשָׂם נְדָבוֹת תַּגִּיף אֱלֹהִים נַחֲלֶתְךָ וְנִלְאָה אֹתָהּ כּוֹנֶנֶתָהּ : חִיתְךָ
יִשְׁבֵּרְכָהּ תִּבִּין בְּטוֹבְתְךָ לַעֲנִי אֱלֹהִים : אֲדֹנִי יִתֵּן־אֶמֶר הַמְבִשְׁרוֹת צָבָא רַב :
מַלְכֵי צָבָאוֹת יִדְדֹן יִדְדֹן וְנֹת בֵּית תַּחֲלֵק שָׁלָל :

(g) הִט אֲזִנְךָ וּשְׁמַע דְּבָרֵי חֲכָמִים וּלְבָבְךָ תִּשְׁתִּי לְדַעֲתִי : פִּי־נָעִים
פִּי־תִשְׁמְרֶם בְּבִטְנְךָ יִכְנֹו יַחְדּוֹ עַל־שִׁפְתֶיךָ : לַהֲיוֹת בִּיהוָה מִבְּטַחְךָ הוֹדַעְתִּיךָ
הַיּוֹם אֶפְדָּאתָה : הֲלֹא כָתַבְתִּי לָךְ שְׁלֹשׁוֹם בְּמַעֲצוֹת וְדַעַת : לַהֲוִידַעַךְ קִשְׁט
אֶמְרִי אֶמֶת לְהוֹשִׁיב אֶמְרִים אֶמֶת לְשִׁלְחֶיךָ :

(h) וַיִּסָּף אֵיזֵב שָׂאת מִשְׁלוֹ וַיֹּאמֶר : חֵי־אֵל הַסִּיר מִשְׁפָּטִי וְשִׁדִּי הַמֵּר
נַפְשִׁי : כִּי־כָל־עוֹד נִשְׁמַתִּי בִּי וְרוּחַ אֱלֹהִים בָּאֵפִי : אִם־תִּרְבֶּרְנָה שִׁפְתֵי עוֹלָה
וּלְשׁוֹנִי אִם־יִדְּבָה רְמִיָה : חֲלִילָה לִּי אִם־אֶצְדִּיק אֶתְכֶם עַד־אֲנֹעַ לֹא־אֶסִּיד תַּמְתִּי
מִמֶּנִּי : בְּצִדְקָתִי הִחֲזַקְתִּי וְלֹא אֶרְפָּה לֹא־יִחַרְף לִבִּי מִמֶּי :

2. Point the following passages, marking the pause accents:

(a) וַיֵּצֵא אֹתָם לֵאמֹר רְאוּ אֹתָם אַרְבִּים לַעֲרֹךְ מֵאַחֲרֵי הָעִיר אֵל תִּרְחִיקוּ מִן
הָעִיר מֵאֹד וְהִייתֶם כָּלְכֶם נִבְנִים : וְאֲנִי וְכָל הָעָם אֲשֶׁר אִתִּי נִקְרַב אֵל הָעִיר וְהִיא
כִּי יֵצְאוּ לִמְרֹאֲתָנוּ כְּאֲשֶׁר בְּרֹאשָׁנָה וְנִסְנוּ לִפְנֵיהֶם : וַיֵּצְאוּ אַחֲרֵינוּ עַד הַתִּיכְנוֹ אֹתָב

מן העיר כי יאמרו נסים לפנינו כאשר בראשנה ונכנו לפניהם : ואתם תקמו מהאורב והורשתם את העיר ונתנה יהוה אלהיכם בידכם : והיה כתפושכם את העיר תציתו את העיר באש כדבר יהוה תעשו ראו צויתי אתכם : וישלחם יהושע וילכו אל המארב וישבו בין בית אל ובין העי מים לעי וילן יהושע בלילה ההוא בתוך העם :

(b) שמעו בנים מוסר אב והקשיבו לדעת בינה : כי לקח טוב נתתי לכם תורתי אל תעזבו : כי בן הייתי לאבי רך ויחיד לפני אמי : וירני ויאמר לי יתמך דברי לבך שמר מצותי וחיה : קנה חכמה קנה בינה אל תשכח ואל תמ מאמרי פי : אל תעזבה ותשמרך אהבה ותצרך : ראשית חכמה קנה חכמה ובכל קנינך קנה בינה : סלסלה ותרוממך תכבדך כי תחבקנה : תתן לראשך לזית חן עטרת תפארת תמגנך : שמע בני וקח אמרי וירבו לך שנות חיים : בדרך חכמה הרתיך הדרכתיך במעגלי ישר : בלכתך לא יצר צעריך ואם תרוץ לא תבשל : החזק במוסר אל תרף נצדה כי היא חי"ך :

3. Translate into BIBLICAL HEBREW :

After this voice there came a man whose appearance was that of a robber, carrying a cross on his shoulder, crying from the outside of the door, and saying: Open to me that I may come in. And Satan opening to him a little brought him inside into his dwelling, and again shut the door after him. And all the saints saw him most clearly, and said to him forthwith: Thy appearance is that of a robber; tell us what it is that thou carriest on thy back. And he answered and said with humility: Truly I was a robber altogether; and the Jews hung me up on a cross, along with my Lord Jesus Christ, the Son of God most High. I have come heralding Him; He indeed is coming behind me.....And, behold, suddenly Hades trembled and the gates of death and the bolts were shattered, and the iron bars were broken and fell to the ground and everything was laid open..... And behold the Lord Jesus Christ, coming in the brightness of light from on high, bound Satan and dashed him into Tartarus.

SECTION II. NEW TESTAMENT.

SATURDAY, June 6, 1885. 1.30—4.30.

THE GOSPEL ACCORDING TO ST JOHN,

WITH CYRIL OF ALEXANDRIA ON II. III;

ORIGEN (TOM. XX) ON VIII;

AND AUGUSTINE (TRACT. LV—CXI) ON XIII—XVII.

1. DISCUSS the question whether the discourses and the narrative portions of the Fourth Gospel come from the same source.

2. "Tiberii anno quinto decimo, id est duobus Geminis consulibus, ante diem x Kal. April. Judaei Christum cruci affixerunt." LACTANTIUS.

What is the bearing of the evidence supplied by St John's Gospel on the date thus assigned?

3. Write a short analysis of our Lord's discourse in the Synagogue at Capernaum, and discuss its application.

4. Discuss the reading and interpretation of three of the following passages:—

(1) Οὗτος ἦν ὃν εἶπον, Ὁ ὀπίσω μου ἐρχόμενος ἔμπροσθέν μου γέγονεν ὅτι πρῶτός μου ἦν.

(2) Ὃν γὰρ ἀπέστειλεν ὁ Θεός, τὰ ῥήματα τοῦ Θεοῦ λαλεῖ· οὐ γὰρ ἐκ μέτρου δίδωσιν ὁ Θεός τὸ πνεῦμα.

(3) Τοῦτο δὲ εἶπε περὶ τοῦ πνεύματος, οὗ ἔμελλον λαμβάνειν οἱ πιστεύοντες εἰς αὐτόν· οὐκ ἦν γὰρ πνεῦμα ἅγιον, ὅτι ὁ Ἰησοῦς οὐδέπω ἐδοξάσθη.

(4) Μὴ καὶ σὺ ἐκ τῆς Γαλιλαίας εἶ; ἐρεύνησον καὶ ἴδε, ὅτι προφήτης ἐκ τῆς Γαλιλαίας οὐκ ἐγήγερται.

(5) Ὁ πατήρ μου, ὃς δέδωκέ μοι, μείζων πάντων ἐστίν· καὶ οὐδεὶς δύναται ἀρπάξειν ἐκ τῆς χειρὸς τοῦ πατρός μου.

5. Mention any points of special interest in the history of the Latin texts of

(1) Ἐν ἀρχῇ ἦν ὁ λόγος, καὶ ὁ λόγος ἦν πρὸς τὸν Θεόν, καὶ Θεὸς ἦν ὁ λόγος.

(2) Οἱ οὐκ ἐξ αἱμάτων, οὐδὲ ἐκ θελήματος σαρκὸς, οὐδὲ ἐκ θελήματος ἀνδρὸς, ἀλλ' ἐκ Θεοῦ ἐγεννήθησαν.

(3) Τὸ γεγεννημένον ἐκ τῆς σαρκὸς σὰρξ ἐστίν· καὶ τὸ γεγεννημένον ἐκ τοῦ πνεύματος πνεῦμά ἐστι.

(4) Καὶ ἄλλα πρόβατα ἔχω ἃ οὐκ ἔστιν ἐκ τῆς αὐλῆς ταύτης· κακεῖνά με δεῖ ἀγαγεῖν, καὶ τῆς φωνῆς μου ἀκούσουσι· καὶ γενήσεται μία ποίμνη, εἰς ποιμήν.

(5) Ἐὰν ἀγαπᾷτέ με, τὰς ἐντολὰς τὰς ἐμὰς τηρήσατε. Καὶ ἐγὼ ἐρωτήσω τὸν πατέρα, καὶ ἄλλον παράκλητον δώσει ὑμῖν, ἵνα μένη μεθ' ὑμῶν εἰς τὸν αἰῶνα.

(6) Ἄλλ' εἰς τῶν στρατιωτῶν λόγχῃ αὐτοῦ τὴν πλευρὰν ἔνυξε, καὶ εὐθὺς ἐξῆλθεν αἷμα καὶ ὕδωρ.

VI. Discuss the reading in the following passages:—

- (i) παρ' ὑμῖν μένει καὶ ἐν ὑμῖν ἐστίν.
- (ii) πέραν τοῦ Χειμάρρου τῶν Κέδρων.
- (iii) ὥρα ἦν ὡς ἕκτη.

and the punctuation of the following:—

(iv) πιστεύετε εἰς τὸν Θεόν, καὶ εἰς ἐμὲ πιστεύετε. ἐν τῇ οἰκίᾳ τοῦ πατρός μου μοναὶ πολλαὶ εἰσιν· εἰ δὲ μή, εἶπον ἂν ὑμῖν, ὅτι πορεύομαι ἐτοιμάσαι τόπον ὑμῖν.

(v) καὶ ἐν ἐμοὶ οὐκ ἔχει οὐδέν, ἀλλ' ἵνα γνῶ ὁ κόσμος ὅτι ἀγαπᾷ τὸν πατέρα, καὶ καθὼς ἐντολὴν ἔδωκέν μοι ὁ πατήρ οὕτως ποιῶ. ἐγείρεσθι, ἄγωμεν ἐντεῦθεν.

VII. Explain the several answers given by our Lord in His examination before Pilate, as recorded by St John.

VIII. Write notes on the following:—

- (i) οὐδεὶς ἐξ αὐτῶν ἀπώλετο εἰ μὴ ὁ υἱὸς τῆς ἀπωλείας, ἵνα ἡ γραφὴ πληρωθῇ:
- (ii) ἤγαγον πρὸς Ἀνναν πρῶτον· ἦν γὰρ πειθερὸς τοῦ. Καιάφα, ὃς ἦν ἀρχιερεὺς τοῦ ἐνιαυτοῦ ἐκείνου.
- (iii) λέγει αὐτῷ Ἑβραϊστὶ Παββουνεί.
- (iv) μὴ γίκου ἄπιστος ἀλλὰ πιστός.

IX. Write notes on the use of the words

αἰτεῖν and ἐρωτᾶν, ἀγαπᾶν and φιλεῖν, εἰδέναι and γινώσκειν;

and of the following:—

τρώγειν, βαστάζειν, πραιτώριον, ἔλυγμα, προσφάγιον.

10. Translate and explain

(1) Γέννησιν δὲ ἀκούων τὴν ἄνωθεν καὶ πνευματικὴν σωματικὴν ἔτι γαστέρα φαντάζεται παλινδρομοῦσαν εἰς ὧδ' ἵνα τῶν ἤδη γεγεννημένων, καὶ τὸν τῆς καθ' ἡμᾶς φύσεως οὐκ ἀναβαίνων νόμον κανονίζει τὰ θεϊότερα· ἀνεξίτητον δὲ ταῖς οἰκείαις ἐννοίαις τὸ τῶν μαθημάτων ὕψος εὐρὺν κάτω πίπτει καὶ φέρεται. ὅνπερ γὰρ τρόπον τὰ τοῖς ἀπεσκληρόσι τῶν λίθων εὐτονωτέραις προσαραχθέντα βολαῖς ὀπίσω πάλιν ἐξάλλεται, οὕτως οἶμαι καὶ νοῦς ἀμαθὴς γοργοτέροις ἢ καθ' ἑαυτὸν προσβαλὼν θεωρήμασιν ἀτονήσας ὑπονοστεῖ, καὶ μέτροις αἰεὶ τοῖς αὐτῷ πρέπουσιν ἐμφιλοχωρῶν τὴν ἀμείνω καὶ ὑψηλοτέραν ἀτιμάζει σύνεσιν.

(2) Χαλεπὸν δὲ καὶ μέγα τῆς ἀπιστίας δεικνύει τὸ ἔγκλημα, ἐπεὶ περ ἐστὶν Υἱὸς καὶ Μονογενής. ὅσῳ γὰρ ἂν ἀξιόπιστον ὑπάρχῃ τὸ παροινούμενον, τοσοῦτον μειζόνως εἰς τὸ πλημμελῆσαι δεινὰ τὸ ἀτιμάζον καταδικασθήσεται. ἤδη δὲ κεκρίσθαι τὸν ἀπιστοῦντά φησιν, ὡς αὐτὸν ἤδη καθ' ἑαυτοῦ τὴν τοῦ κολάζεσθαι δεῖν ὀρίσαντα ψῆφον, δι' ὧν ἔγνω παραιτεῖσθαι τὸν τοῦ μὴ κρίνεσθαι χορηγόν.

11. Give Cyril's explanation of two of the following clauses, and the dogmatic inferences which he draws from them. Give in the Greek, where you can, any important distinctions or definitions which occur in the course of his argument.

(1) τὸν οἶκον τοῦ Πατρὸς μου.

(2) καὶ οὐδεὶς ἀναβέβηκεν εἰς τὸν οὐρανόν, εἰ μὴ ὁ ἐκ τοῦ οὐρανοῦ καταβὰς, ὁ υἱὸς τοῦ ἀνθρώπου ὁ ὢν ἐν τῷ οὐρανῷ.

(3) ὁ ἄνωθεν ἐρχόμενος ἐπάνω πάντων ἐστίν.

(4) ὁ πατὴρ ἀγαπᾷ τὸν υἱόν, καὶ πάντα δέδωκεν ἐν τῇ χειρὶ αὐτοῦ.

12. Translate and explain

(1) Ταῦτα πρὸς τὸ Τοῦτο Ἀβραὰμ οὐκ ἐποίησε. Τί δὲ τοῦτο ἢ τὸ ζητεῖν ἀποκτείνειν ἄνθρωπον, ὃς τὴν ἀλήθειαν λελάληκεν ἣν ἤκουσε παρὰ τοῦ Θεοῦ; Ἀποδίδομεν γὰρ ὡς ἄρα κατὰ τὸν Ἰησοῦν πνευματικὴ οἰκονομία οὐκ ἔστιν ὅτε τοῖς ἀγίοις οὐκ ἦν. εἰ δὲ ἀναγαγῇ ταῦτα, ὥσπερ ὑπονενοήκαμεν ἐν ἄλλοις, ἕτερος παρὰ τὸ κοινότερον ἐπὶ μυστικώτερον Ἀβραὰμ ὁμοίως πάντα τὰ κατὰ τὸν τόπον ἐξομαλίσαι πειράσεται, ζητῶν τὴν ἐκάστου τούτων ἀκολουθίαν.

(2) Ἐπιστήσεις δὲ εἰ καὶ διὰ τὴν ἀνθρωποκτονίαν αὐτοῦ οὐκ ἂν συστάντα τὰ ἐπὶ τῆς ἐπικαταράτου γῆς ἐν τοῖς ἔργοις τοῦ ἐκβληθέντος ἀπὸ τοῦ παραδείσου τῆς τρυφῆς Ἀδὰμ συνέστη. πλὴν ἀνθρωποκτόνος οὗτος ἀπὸ τῆς τῶν ἐνεστηκότων γέγονεν ἀρχῆς, ὅστις, οἶμαι, γενόμενος ἀρχὴ πλάσματος κυρίου ἐφθόνησε τοῖς κτισθεῖσιν εἰς τὸ εἶναι.

13. Give the purport of Origen's comments on two of the following passages:—

(1) εἰ τέκνα τοῦ Ἀβραὰμ ἦτε, τὰ ἔργα τοῦ Ἀβραὰμ ποιεῖτε.

(2) ἐγὼ δὲ ὅτι τὴν ἀλήθειαν λέγω, οὐ πιστεύετε μοι.

(3) οὐ καλῶς λέγομεν ἡμεῖς, ὅτι Σαμαρείτης εἶ σὺ, καὶ δαιμόνιον ἔχεις;

(4) ἐγὼ δὲ οὐ ζητῶ τὴν δόξαν μου· ἔστιν ὁ ζητῶν καὶ κρίνων.

XIV. Give in substance and examine St Augustine's comments upon these passages:—

(i) ἵνα ἡ χαρὰ ἣ ἐμὴ ἐν ὑμῖν ἦ καὶ ἡ χαρὰ ὑμῶν πληρωθῇ.

(ii) καὶ ἐλθὼν ἐκεῖνος ἐλέγξει τὸν κόσμον περὶ ἁμαρτίας καὶ περὶ δικαιοσύνης καὶ περὶ κρίσεως. περὶ ἁμαρτίας μὲν, ὅτι οὐ πιστεύουσιν εἰς ἐμέ· περὶ δικαιοσύνης δέ, ὅτι πρὸς τὸν πατέρα ὑπάγω καὶ οὐκέτι θεωρεῖτέ με· περὶ δὲ κρίσεως, ὅτι ὁ ἄρχων τοῦ κόσμου τούτου κέκριται.

(iii) καθὼς ἐμέ ἀπέστειλας εἰς τὸν κόσμον, καὶ γὰρ ἀπέστειλα αὐτοὺς εἰς τὸν κόσμον· καὶ ὑπὲρ αὐτῶν ἐγὼ ἀγιάζω ἐμαυτὸν, ἵνα ὧσιν καὶ αὐτοὶ ἁγιασμένοι ἐν ἀληθείᾳ. οὐ περὶ τούτων δὲ ἐρωτῶ μόνον, ἀλλὰ καὶ περὶ τῶν πιστευόντων διὰ τοῦ λόγου αὐτῶν εἰς ἐμέ, ἵνα πάντες ἐν ὧσιν, καθὼς σὺ, πατήρ, ἐν ἐμοὶ καὶ γὰρ ἐν σοί, ἵνα καὶ αὐτοὶ ἐν ἡμῖν ὧσιν, ἵνα ὁ κόσμος πιστεύῃ ὅτι σὺ με ἀπέστειλας.

XV. Translate

Euigila igitur, homo fidelis, et uigilanter audi quod illic positum est, in nomine meo: ipsum enim quodcumque non ait petieritis utcumque, sed in nomine meo. qui promisit ergo tam magnum beneficium, quid uocatur? utique Christus Iesus. Christus significat regem, Iesus significat saluatorem: non utique nos saluos faciet quicumque rex, sed rex saluator. ac per hoc quodcumque petimus aduersus utilitatem salutis, non petimus in nomine saluatoris, et tamen ipse saluator est, non solum quando facit quod petimus, uerum etiam quando non facit: quoniam quod uidet peti contra salutem, non faciendo potius se exhibet saluatorem. nouit enim medicus quid pro sua, quid contra suam salutem poscat aegrotus, et ideo contraria poscentis non facit uoluntatem, ut faciat sanitatem. quapropter quando uolumus ut faciat quodcumque petimus, non utcumque sed in nomine eius petamus, hoc est in nomine saluatoris petamus. non ergo contra nostram salutem petamus: quod si fecerit, non ut saluator facit, quod est nomen eius fidelibus eius. est quippe impiis et damnator, qui dignatur fidelibus esse saluator.

How far may this principle be applied in other places where 'the Name' is mentioned? e.g.

(i) τὸ πνεῦμα τὸ ἅγιον ὃ πέμπει ὁ πατήρ ἐν τῷ ὀνόματί μου.

(ii) πατήρ ἅγιε, τήρησον αὐτοὺς ἐν τῷ ὀνόματί σου· ὃ δέδωκάς μοι.

SECTION II. NEW TESTAMENT.

MONDAY, June 8, 1885. 9—12.

A.

THE EPISTLE TO THE GALATIANS,

WITH THE COMMENTARIES OF THEODORE OF MOPSUESTIA AND JEROME.

1. PARAPHRASE the following passages, with short notes:—

(α) ἀλλ' οὐδὲ Τίτος ὁ σὺν ἐμοί, Ἑλλήν ὢν, ἠναγκάσθη περιτμηθῆναι· διὰ δὲ τοὺς παρεισάκτους ψευδαδέλφους, οἵτινες παρεισῆλθον κατασκοπῆσαι τὴν ἐλευθερίαν ἡμῶν ἣν ἔχομεν ἐν Χριστῷ Ἰησοῦ, ἵνα ἡμᾶς καταδουλώσουσιν, — οἷς οὐδὲ πρὸς ὧραν εἴξαμεν τῇ ὑποταγῇ, ἵνα ἡ ἀλήθεια τοῦ εὐαγγελίου διαμείνῃ πρὸς ὑμᾶς.

Mention and account for the variation of reading noted by Jerome in this passage. What opinions did he and Theodore respectively discuss or adopt concerning the relation of St Peter to St Paul?

(β) ζηλοῦσιν ὑμᾶς οὐ καλῶς, ἀλλὰ ἐκλείσαι ὑμᾶς θέλουσιν, ἵνα αὐτοὺς ζηλοῦτε. καλὸν δὲ ζηλοῦσθαι ἐν καλῷ πάντοτε, καὶ μὴ μόνον ἐν τῷ παρεῖναί με πρὸς ὑμᾶς, τέκνια μου, οὓς πάλιν ὠδίνω μέχρις οὗ μορφωθῇ Χριστὸς ἐν ὑμῖν· ἤθελον δὲ παρεῖναι πρὸς ὑμᾶς ἄρτι, καὶ ἀλλάξαι τὴν φωνήν μου, ὅτι ἀποροῦμαι ἐν ὑμῖν.

Discuss one grammatical and one textual point in this passage.

2. Translate

(α) καθ' ὑπόκρισιν ἀναγνώστειν. ἀλλὰ τοῦτο ἐρωτᾷς· τίς ἡ τοῦ νόμου χρεία, εἴπερ δὴ τὴν ἐπαγγελίαν καὶ τὴν χάριν ἔδει κρατεῖν; τῶν παραβάσεων χάριν προστετέθη.

'Quid ergo lex? secundum hypocrisin; in lege debet manere. sed interrogas (inquit) quae sit legis necessitas, si nunc promissionem et gratiam tenere conveniebat? praevaricationum causa adiecta est, donec ueniat semen cui promissum est.'

Explain this passage, and give briefly the literary history of the version from which it is extracted.

(β) εἰ μέλλετε πρὸς ἀλλήλους οὕτως φιλονεικεῖν ἀνανδότης, οὐ μόνον οὐδὲν ὠφελεῖτε τοὺς ἁμαρτάνοντας, ἀλλὰ γὰρ τοῦναντίον ἔξω παντελῶς γενέσθαι αὐτοὺς τῆς εὐσεβείας παρασκευάζετε. ὁ καὶ καλῶς ἀναλίσκεσθαι ἐκάλεσεν, ἅτε δὴ μείωσιν ἐργαζομένων τῷ κοινῷ τῶν τῆς εὐσεβείας ἀποχωρούντων.

3. In what other epistles do these two commentators respectively find a resemblance to the Epistle to the Galatians? What explanations do they give of ὁ δὲ μεσίτης ἑνὸς οὐκ ἔστιν, ὁ δὲ θεὸς εἰς ἐστίν?

4. Explain five out of each group of the following words and phrases:—

(a) οἱ δοκοῦντες στύλοι εἶναι—ὑπέστελλον—ὁ ἐπιχορηγῶν ὑμῖν τὸ πνεῦμα—βάρος...φορτίον—πεπίστευμαι—συγκλείειν—τὰ ἀσθενῆ καὶ πτωχὰ στοιχεῖα—τὰ στίγματα τοῦ Κυρίου—(β) 'ne subito in extraordinaria praecepta Paulus erumpat'—'in exemplaribus Adamantii'—'crucifigere...recrucifigere'—'qui catechizatur uerbum'—'in-uertibilitas'—'rationabilitas'—'eligitissimum apostolorum'—'aprior.'

5. Notice any Latin variety of reading in these passages:—(a) 'temptationem meam quae est in carne'—(b) 'carnem crucifixerunt cum passionibus et concupiscentiis'—(c) 'Agar enim Sina mons est in Arabia.'

6. Give the Greek equivalent of 'praeuaricator,' 'superordinat,' 'ueneficia,' 'tincti estis,' 'si tamen sine causa,'—and the Latin (Vulgate or other) of παρεισάκτους, ὀρθοποδοῦσιν, κατεγνωσμένος, ὑπὸ ἐπιτρόπους καὶ οἰκονόμους, εἰδωλολατρεῖα, αἱρέσεις.

B.

THE EPISTLE TO THE PHILIPPIANS,

WITH CHRYSOSTOM'S HOMILIES.

1. ILLUSTRATE the statement that the Epistle to the Philippians reveals aspects of St Paul's character which the other letters do not present. Discuss the question whether this circumstance is adverse or favourable to its authenticity.

2. Write short notes on

(1) μὴ πτυρόμενοι ἐν μηδενὶ ὑπὸ τῶν ἀντικειμένων, ἥτις ἐστὶν αὐτοῖς ἔνδειξις ἀπωλείας, ὑμῖν δὲ σωτηρίας, καὶ τοῦτο ἀπὸ θεοῦ.

(2) θεὸς γάρ ἐστιν ὁ ἐνεργῶν ἐν ὑμῖν καὶ τὸ θέλει καὶ τὸ ἐνεργεῖν ὑπὲρ τῆς εὐδοκίας.

(3) ἀλλὰ μὲν οὖν γε καὶ ἡγοῦμαι πάντα ζημίαν εἶναι διὰ τὸ ὑπέρεχον τῆς γνώσεως Χριστοῦ Ἰησοῦ τοῦ κυρίου μου δι' ὃν πάντα ἐζημιώθην, καὶ ἡγοῦμαι σκύβαλα ἵνα Χριστὸν κερδήσω.

(4) ὅσοι οὖν τέλειοι, τοῦτο φρονώμεν· καὶ εἴ τι ἐτέρως φρονεῖτε, καὶ τοῦτο ὁ θεὸς ὑμῖν ἀποκαλύψει· πλὴν εἰς ὃ ἐφθάσαμεν, τῷ αὐτῷ στοιχεῖν.

3. ὅς ἐν μορφῇ Θεοῦ ὑπάρχων οὐχ ἄρπαγμόν ἡγήσατο τὸ εἶναι ἴσα Θεῷ.

Give the substance of Chrysostom's comment on this verse, (1) as supplying an answer to different forms of heretical teaching, (2) as affording proof of the equal Godhead of the Son.

4. Translate, and explain where necessary,

Ὅρᾳς τὸ ταπεινὸν Παύλου; ὁρᾳς τὸ εὐγενές; Ὅτε ἔδειξεν οὐδὲν δεόμενον τῶν παρ' ἐκείνων αὐτοῦ ἕνεκεν, τότε λοιπὸν ἀδεῶς καὶ ταπεινὰ φθέγγεται ῥήματα, καὶ ἅπερ οἱ προσαιτοῦντες λέγουσιν, ὡς ἔθος ἔχεις διδόναι. Οὐδὲν γὰρ παραιτεῖται οὔτε ποιεῖν οὔτε λέγειν. Τουτέστι, μὴ νομίσητε ἀναισχυντίας εἶναι τὰ ῥήματα, τὸ ἐγκαλεῖν καὶ λέγειν Ἥδη ποτὲ ἀνεθάλετε, καὶ τοῦ ἐν χρείᾳ εἶναι· οὐ γὰρ δεόμενος ταῦτα λέγω, ἀλλὰ τί; ἐκ τοῦ σφόδρα θαρρεῖν ὑμῖν· καὶ τούτου δὲ ὑμεῖς αἴτιοι. Ὅρᾳς πῶς αὐτοὺς θεραπεύει; Πῶς ὑμεῖς αἴτιοι; Πρὸ τῶν ἄλλων ἀπάντων ἐπιπηδήσαντες τῷ πράγματι, καὶ παρρησίαν ἡμῖν δόντες ὑπὲρ τῶν τοιούτων ὑπομιμνήσκουσιν ὑμᾶς. Καὶ θεὰ τὸ σεμνόν. Μὴ πέμπουσι μὲν οὐκ ἐγκαλεῖ, ἵνα μὴ δόξῃ τὸ ἑαυτοῦ θεραπεύειν· ἐπειδὴ δὲ ἔπεμψαν, τότε ἐπετίμησεν ὑπὲρ τοῦ παρελθόντος χρόνου, καὶ ἤνεγκαν· λοιπὸν γὰρ οὐκ ἂν ἔδοξε τὸ αὐτοῦ θεραπεύειν.

5. How does Chrysostom interpret τὸ πραιτώριον, σχῆμα, λόγος ζωῆς, ἐν κυρίῳ, σύζυγε γνήσιε, ἡ εἰρήνη τοῦ Θεοῦ, ἀνεθάλετε?

6. Comment on any peculiarities in the following, and give, where you can, the Vulgate rendering:—

(1) Qui in effigie dei constitutus non rapinam existimavit parari deo, sed exhausit semet ipsum accepta effigie servi.

(2) Ad agnoscendum illum, et virtutem resurrectionis ejus, et communicationem passionum ejus, cooneratus morte ipsius.

(3) Ego me, fratres, non puto adprehendisse; unum plane, oblitus posteriorum, in priora me extendens, secundum scopum persequor, ad palmam incriminationis per quam concurrerem.

(4) Noster municipatus in caelis, unde et salutificatorem nostrum exspectamus Jesum Christum, qui transfigurabit corpus nostrae humilitatis conformale corpori gloriae suae.

C.

THE EPISTLES OF ST JOHN.

1. COLLECT the external evidence to the Epistles of St John during the second century, and comment upon the relation of the evidence for the First Epistle to that for the Second and Third.

2. Describe accurately from internal evidence the nature of the false teaching contemplated in these Epistles.

OR

What light is thrown by 2 and 3 John on the internal life and organization of the early Christian societies?

3. Explain fully the doctrinal bearings of

Καὶ εἰάν τις ἀμάρτη, παράκλητον ἔχομεν πρὸς τὸν πατέρα Ἰησοῦν Χριστὸν δίκαιον· καὶ αὐτὸς ἱλασμός ἐστι· περὶ τῶν ἀμαρτιῶν ἡμῶν, οὐ περὶ τῶν ἡμετέρων δὲ μόνον ἀλλὰ καὶ περὶ ὅλου τοῦ κόσμου.

Compare the teaching of St John in this passage with that of St Paul.

4. Explain by a short paraphrase, adding notes on any single expressions that seem to need them,

(1) Ὁ ἦν ἀπ' ἀρχῆς, ὃ ἀκηκόαμεν, ὃ ἐώρακάμεν τοῖς ὀφθαλμοῖς ἡμῶν, ὃ ἐθεασάμεθα καὶ αἱ χεῖρες ἡμῶν ἐψηλάφησαν, περὶ τοῦ λόγου τῆς ζωῆς· καὶ ἡ ζωὴ ἐφανερώθη, καὶ ἐώρακάμεν, καὶ μαρτυροῦμεν, καὶ ἀπαγγέλλομεν ὑμῖν τὴν ζωὴν τὴν αἰώνιον, ἣτις ἦν πρὸς τὸν πατέρα καὶ ἐφανερώθη ἡμῖν· ὃ ἐώρακάμεν καὶ ἀκηκόαμεν ἀπαγγέλλομεν ὑμῖν, ἵνα καὶ ὑμεῖς κοινωνίαν ἔχητε μεθ' ἡμῶν καὶ ἡ κοινωνία δὲ ἡ ἡμετέρα μετὰ τοῦ πατρὸς καὶ μετὰ τοῦ υἱοῦ αὐτοῦ Ἰησοῦ Χριστοῦ.

(2) Ἐν τούτῳ γινώσκουμεν ὅτι ἐκ τῆς ἀληθείας ἐσμὲν, καὶ ἔμπροσθεν αὐτοῦ πείσομεν τὰς καρδίας ἡμῶν, ὅτι εἰάν καταγινώσκη ἡμῶν ἡ καρδιά, ὅτι μερίζων ἐστὶν ὁ Θεὸς τῆς καρδίας ἡμῶν, καὶ γινώσκει πάντα.

(3) Βλέπετε ἑαυτοὺς, ἵνα μὴ ἀπελίσσωμεν ἃ εἰργασάμεθα, ἀλλὰ μισθὸν πλήρη ἀπολάβωμεν. Πᾶς ὁ παραβαίνων, καὶ μὴ μένων ἐν τῇ διδαχῇ τοῦ Χριστοῦ, Θεὸν οὐκ ἔχει· ὁ μένων ἐν τῇ διδαχῇ τοῦ Χριστοῦ, οὗτος καὶ τὸν πατέρα καὶ τὸν υἱὸν ἔχει.

5. Discuss, with especial reference to the evidence of the Latin Versions, the reading and interpretation of

(1) Καὶ ὑμεῖς χρίσμα ἔχετε ἀπὸ τοῦ ἁγίου, καὶ οἴδατε πάντα.

(2) Ἰδετε ποταπὴν ἀγάπην δέδωκεν ἡμῖν ὁ πατήρ, ἵνα τέκνα Θεοῦ κληθῶμεν.

(3) Πᾶν πνεῦμα ὃ μὴ ὁμολογεῖ τὸν Ἰησοῦν Χριστὸν ἐν σαρκὶ ἐληλυθότα ἐκ τοῦ Θεοῦ οὐκ ἔστι.

SECTION II. NEW TESTAMENT.

MONDAY, June 8, 1885. 1.30—4.30.

GENERAL PAPER, WITH GREEK COMPOSITION.

A.

1. INDICATE the chief stages in the relations between our Lord and the Jews as shown in *one* of the first three Gospels.

2. Trace the main principles which underlie the literary composition and structure of the Acts.

3. Assuming nothing to be known of St Paul except from his own Epistles, sketch his life, specifying in the margin the epistle from which each incident is derived.

4. Point out and illustrate from the Epistle to the Hebrews the religious dangers to which the Hebrew Christians were exposed at the time when it was written.

5. Comment, without translation, on the following passages:—

(α) μή δύνανται οἱ υἱοὶ τοῦ νυμφῶνος ἐν ᾧ ὁ νυμφίος μετ' αὐτῶν ἐστὶν νηστεύειν; ὅσον χρόνον ἔχουσιν τὸν νυμφίον μετ' αὐτῶν οὐ δύνανται νηστεύειν. ἐλεύσονται δὲ ἡμέραι ὅταν ἀπαρθῇ ἀπ' αὐτῶν ὁ νυμφίος, καὶ τότε νηστεύσουσιν ἐν ἐκείνῃ τῇ ἡμέρᾳ.

(β) περὶ τῆς βρώσεως οὖν τῶν εἰδωλοθύτων οἶδαμεν ὅτι οὐδὲν εἶδωλον ἐν κύσμῳ.

(γ) ὥστε ἡμεῖς ἀπὸ τοῦ νῦν οὐδένα οἶδαμεν κατὰ σάρκα· εἰ καὶ ἐγνώκαμεν κατὰ σάρκα Χριστόν, ἀλλὰ νῦν οὐκέτι γινώσκομεν.

(δ) ὅτε δὲ ἡ χρηστότης καὶ ἡ φιланθρωπία ἐπεφάνη τοῦ σωτῆρος ἡμῶν Θεοῦ, οὐκ ἐξ ἔργων τῶν ἐν δικαιοσύνῃ αἱ ἐποιήσαμεν ἡμεῖς ἀλλὰ κατὰ τὸ αὐτοῦ ἔλεος ἔσωσεν ἡμᾶς διὰ λουτροῦ παλινγενεσίας καὶ ἀνακαινώσεως πνεύματος ἁγίου, οὗ ἐξέχεεν ἐφ' ἡμᾶς πλουσίως διὰ Ἰησοῦ Χριστοῦ τοῦ σωτῆρος ἡμῶν, ἵνα δικαιωθέντες τῇ ἐκείνου χάριτι κληρονόμοι γενηθῶμεν κατ' ἐλπίδα ζωῆς αἰωνίου.

(ε) σὺ ἔκτισας τὰ πάντα, καὶ διὰ τὸ θέλημά σου ἦσαν καὶ ἐκτίσθησαν.

6. Translate with brief notes

(α) βουληθεὶς ἀπεκύησεν ἡμᾶς λόγῳ ἀληθείας, εἰς τὸ εἶναι ἡμᾶς ἀπαρχὴν τινα τῶν αὐτοῦ κτισμάτων.

(β) ἵνα μηκέτι ὤμεν νήπιοι, κλυδωνιζόμενοι καὶ περιφερόμενοι παντὶ ἀνέμῳ τῆς διδασκαλίας ἐν τῇ κυβίᾳ τῶν ἀνθρώπων ἐν πανουργίᾳ πρὸς τὴν μεθοδίαν τῆς πλάνης.

(γ) ὦν ἔστω οὐκ ὁ ἔξωθεν ἐμπλοκῆς τριχῶν καὶ περιθέσεως χρυσίων ἢ ἐνδύσεως ἱματίων κόσμος, ἀλλ' ὁ κρυπτὸς τῆς καρδίας ἄνθρωπος ἐν τῷ ἀφθάρτῳ τοῦ ἡσυχίου καὶ πραέως πνεύματος, ὃ ἐστὶν ἐνώπιον τοῦ θεοῦ πολυτελής.

(δ) ἐν ᾧ περισσότερον βουλόμενος ὁ θεὸς ἐπιδείξει τοῖς κληρονόμοις τῆς ἐπαγγελίας τὸ ἀμετάθετον τῆς βουλῆς αὐτοῦ ἐμεσίτευσεν ὄρκῳ, ἵνα διὰ δύο πραγμάτων ἀμεταθέτων, ἐν οἷς ἀδύνατον ψεύσασθαι θεόν, ἰσχυρὰν παράκλησιν ἔχωμεν οἱ καταφυγόντες κρατῆσαι τῆς προκειμένης ἐλπίδος.

7. Write down the Greek original of the following passage:—

In quo habemus redemptionem per sanguinem ejus, remissionem peccatorum, secundum divitias gratiae ejus quae superabundavit in nobis in omni sapientia et prudentia, ut notum faceret nobis sacramentum voluntatis suae, secundum bonum placitum ejus quod proposuit in eo in dispensationem plenitudinis temporum, instaurare omnia in Christo, quae in caelis et quae in terra sunt; in ipso, in quo etiam sorte vocati sumus, praedestinati secundum propositum ejus qui omnia operatur secundum consilium voluntatis suae, ut simus in laudem gloriae ejus qui ante speravimus in Christo.

How do you account for the rendering *sorte vocati sumus*? Does the passage (1) contain any mistranslations, (2) imply any differences in its Greek original from what you consider the true or from the Received Text?

B.

8. Recapitulate the various statements of ancient authors about a Hebrew Gospel written by St. Matthew, and its relation to the Greek Gospel which bears his name. Discuss the question whether what they had in view was the Gospel according to the Hebrews, mentioning the sources from which any existing knowledge of the contents and character of the last named Gospel is derived.

9. Write a summary of what is known from the New Testament respecting Christianity at Rome. In what respects, if any, can our knowledge of it during the period covered by the New Testament be modified or supplemented from other sources?

10. Sketch the history of the reception of the Apocalypse in the first five centuries. What writers of this period are known to have commented on it or made large use of it? Point out the chief epochs, down to the present time, at which it has received special attention.

11. (1) Discuss the evidence by which it has been maintained that a revision of the Greek text of the New Testament took place in Syria between 250 and 350; and also the evidence for the nature of the materials used in this revision and the manner in which they were used.

(2) Given two closely related MSS., how would you determine whether they were derived the one from the other or both from a lost original?

12. State what you remember respecting the documentary evidence (1) for each of the three insertions in the question and answer concerning fire from heaven (Luke ix. 54 f.);

or

(2) for each of the three consecutive insertions respecting the pool of Bethzatha (John v. 3 f.);

and discuss in either place the steps by which the longest (or the shortest) total reading was formed;

or

(3) state the variation of text in Acts xv. 23 (*Οἱ ἀπόστολοι καὶ οἱ πρεσβύτεροι ἀδελφοὶ τοῖς κατὰ τὴν Ἀντιόχειαν καὶ Συρίαν καὶ Κιλικίαν ἀδελφοῖς τοῖς ἐξ ἐθνῶν χαίρειν*), giving some account of the documentary evidence for both readings and discussing their relative probability on internal grounds, and mention any other interesting various readings in the same epistle.

13. Translate into GREEK:

Tu autem, Domine, miserere mei secundum magnam misericordiam tuam propter nomen tuum, et nequaquam deserens coepta tua consuetudinem imperfecta mea. Hic est fructus confessionum mearum, non qualis fuerim sed qualis sim, ut hoc confitear non tantum coram te secreta exultatione cum tremore et secreto maerore cum spe sed etiam in auribus credentium filiorum hominum, sociorum gaudii mei et consortium mortalitatis meae, civium meorum et mecum peregrinorum. Hi sunt servi tui fratres mei quos filios tuos esse voluisti, dominos meos, quibus iussisti ut serviam si volo tecum de te vivere. * * * Parvulus sum, sed vivit semper pater meus, et idoneus est mihi tutor meus. Idem ipse est enim qui genuit me et tuetur me, et tu ipse es omnia bona mea, tu omnipotens, qui mecum es et priusquam tecum sim.

AUGUSTINUS.

SECTION III. HISTORY AND LITERATURE.

TUESDAY, June 9, 1885. 9—12.

A.

THE BOOK OF WISDOM.

I. POINT out precisely the doctrines or ideas of the Book of Wisdom which cannot naturally be traced to a purely Jewish origin, quoting the more characteristic phrases. What beliefs respecting a future life are expressed or implied in it?

II. In what respects is this book indebted to the Book of Proverbs in thought or language? Compare its representation of any one incident in the history of Israel (*e.g.* the giving of the Manna) with the narrative in the Old Testament, pointing out the lessons deduced by the author.

III. Discuss the question whether the extant Greek text of the book is complete.

Mention any important various readings in the following passages, and discuss their relative probability on internal grounds alone:—

(1) ὁ θεὸς ἔκτισεν τὸν ἄνθρωπον ἐκ ἀφθαρσίας, καὶ εἰκόνα τῆς ἰδίας ἰδιότητος ἐποίησεν αὐτόν.

(2) ξύλον...λαβὼν ἐγλυψεν ἐν ἐπιμελείᾳ ἀργίας αὐτοῦ, καὶ ἐμπειρία συνέσσω ἐτίκνωσεν αὐτό, ἀπέκασεν αὐτὸ εἰκὼν ἀνθρώπου.

IV. Translate with notes four of the following sentences:—

(1) ὅτι πνεῦμα Κυρίου πεπλήρωκεν τὴν οἰκουμένην, καὶ τὸ συνέχον τὰ πάντα γινώσκει φωνῆς.

(2) βασκανία γὰρ φεαλότητος ἀμαυραὶ τὰ καλὰ, καὶ ῥαμβασμοὶ ἐπιθυμίας μεταλλεῖ νοῦν ἄκακον.

(3) διατείνει δὲ ἀπὸ πέρατος εἰς πέρας εὐρώστως, καὶ διοικεῖ τὰ πάντα χρηστῶς.

(4) κρίνων δὲ κατὰ βραχὺ ἐδίδους τόπον μετάνοίας, οὐκ ἀγνοῶν ὅτι πονηρὰ ἡ γένεσις αὐτῶν καὶ ἔμφυτος ἡ κακία αὐτῶν, καὶ ὅτι οὐ μὴ ἀλλαγῇ ὁ λογισμὸς αὐτῶν εἰς τὸν αἰῶνα.

(5) εἰς ἐπίτασιν δὲ θρησκείας καὶ τοὺς ἀγνοοῦντας ἢ τοῦ τεχνίτου προετρέψατο φιλοτιμία.

(6) ἀλλὰ ἐλογίσατο καίγνιον εἶναι τὴν ζωὴν ἡμῶν καὶ τὸν βίον πανηγυρισμὸν ἐπικερδῆ, δεῖν γὰρ φησιν ὅθεν δὴ καὶ ἐκ κακοῦ πορίζειν.

(7) ἡ μὲν γὰρ ὑπόστασις σου τὴν σὴν πρὸς τέκνα γλυκύτητα ἐνεφάνισεν, τῇ δὲ τοῦ προσφερομένου ἐπιθυμίᾳ ὑπηρετῶν πρὸς ὃ τις ἐβούλετο μετεκίρνατο.

V. Translate with notes five of the following:—

- (1) οὐκ ἔστιν ἐν αὐταῖς φάρμακον ὀλέθρου οὔτε ἄδου βασιλῆιον ἐπὶ γῆς.
- (2) οὐκ ἐγνώσθη ὁ ἀναλύσας ἐξ ἄδου.
- (3) ἐπιφημίζει ἡμῖν ἀμαρτήματα παιδείας ἡμῶν.
- (4) ἔσται γὰρ αὐτοῦ ἐπισκοπὴ ἐκ λόγων αὐτοῦ.
- (5) πειράζουσιν δὲ αὐτὸν οἱ τῆς ἐκείνου μερίδος ὄντες.
- (6) φθάνει τοὺς ἐπιθυμοῦντας προγνωσθῆναι.
- (7) αὐτῇ...ἀγῶνα ἰσχυρὸν ἐβράβευσεν αὐτῇ.
- (8) πῶς...ἀν...τὸ μὴ κληθῆν ὑπὸ σοῦ διετηρήθη;
- (9) τὸ τῆς ψυχῆς ἀπαιτηθεὶς χρέος.
- (10) τὸ πνεῦμα δεδανεισμένος ἔπλασεν αὐτοῦς.

VI. Give the meaning of the following words, and the context or contexts in which they severally occur:—

ἀπότομος, ἀρμόνιος, αὐτοσχεδίας, ἔξοδος, ἐπισκοπή, θραῦσις, καταλύτης, παράταξις, προϋφίσταμαι, σκῆνος, σύντριμμα, φιλόψυχος.

B.

THE CLEMENTINE RECOGNITIONS.

I. STATE and examine briefly the evidence for the existence of *Κηρύγματα Πέτρου* more ancient than the *Περίοδοι Πέτρου* current early in the third century, and having a more pronounced Anti-Pauline character than either of the extant Clementine writings.

II. Enumerate the various authorities, historical or legendary, for the existence and acts of Simon Magus, with an indication of the chief points contained in each record. Compare the *Recognitions* with the *Homilies* as regards their references or allusions to St Paul.

III. Exhibit in a tabular form in parallel columns the structure of the first book of the *Recognitions* and of the corresponding part of the *Homilies*, shewing the elements peculiar to each work and those which are common to both.

OR

Describe clearly the doctrine of the *Recognitions* on faith, order, *paria*, water, and the two heavens; and collect the evidence which they contain as to Eucharistic usage or language.

IV. Translate and explain, giving the probable Greek equivalents of the more important words,

(1) Deus cum fecisset mundum tamquam universitatis dominus singulis quibusque creaturis principes statuit.

(2) Si primus homo prophetavit, certum est quod et unctus sit: licet enim unctionem illius siluerit ille qui legem in paginis condidit, nobis tamen intellegenda haec evidenter reliquit.

(3) Cum ergo nihil novi de illa virtute quam dicis non solum ad intellegendum verum ne ad nominandum quidem habeas, quomodo introducis novum deum cujus nec appellationem quidem invenis novam? Virtus enim non solum creator mundi dicitur, sed et ministri gloriae ejus omnisque militia caelestis. Non tibi ergo melius videtur esse ut sequamur factorem nostrum Deum tamquam patrem erudientem nos et imbuentem sicut ipse novit?

V. Translate and explain, giving the probable Greek equivalents of the more important words,

(1) Nisi enim potestate excelsi numquam potiora inferioribus ministrarent: et per hoc non solum curam Deus erga homines sed et grandem quemdam habere docetur affectum, quorum ministerio tam praeclara mancipavit elementa.

(2) Quod ergo immensum est bonitate pater est, virtute conditor. Neque ergo condendi virtus in immenso cessare potuit neque bonitas otiosi; sed ad substituenda ea quae sunt bonitate, ad componenda et firmanda virtute provocatur.

(3) Hesterno die, o senex, cum Clemente placuerat ut hodie sermo fieret, et aut tu ostenderes nihil extra genesim fieri aut Clemens doceret genesim non esse sed in nobis et in nostra potestate haberi quae gerimus.

C.

JOSEPHUS. ANTIQUITIES, BOOKS XIX. XX.

1. WRITE a short sketch of the life of Josephus. What writings did he leave behind him? Reconcile the statements in the Preface and in the concluding chapter in regard to the relative priority of this work and his "Wars of the Jews."

2. What does Josephus tell us of the relations between Claudius and the family of Agrippa? How do his statements on this point illustrate the narrative in the Acts of the Apostles?

OR

Illustrate the moral influence of Judaism by the career and character of Izates.

3. Illustrate the relations of the civil government to the high-priesthood as described in these books.

4. Translate two of the following passages, with historical notes, illustrating where possible from the narrative in the Gospels and Acts:—

α. Ἀβίλαν δὲ τὴν Λυσανίου καὶ ὅποσα ἐν τῷ Λιβάνῳ ὄρει ἐκ τοῦ αὐτοῦ προσετίθει, ὄρκιά τε αὐτῷ τέμνεται πρὸς τὸν Ἀγρίππαν ἐπὶ τῆς ἀγορᾶς μέσης ἐν τῇ Ῥωμαίων πόλει. Ἀντίοχον δὲ ἣν εἶχεν βασιλείαν ὀφελόμενος, Κιλικίας μέρει τινὶ καὶ Κομμαγενῇ δωρεῖται. Λύει δὲ καὶ Ἀλέξανδρον Λυσίμαχον τὸν ἀλαβάρχη, φίλον ἀρχαῖον αὐτῷ γεγονότα καὶ Ἀντωνίαν αὐτοῦ ἐπιτροπεύσαντα τὴν μητέρα, ὀργῇ τῇ Γαίου δεδεμένον· καὶ αὐτοῦ υἱὸς Βερενίκην τὴν Ἀγρίππα γαμεῖ θυγατέρα. Καὶ ταύτην μὲν (τελευτᾷ γὰρ Μάρκος ὁ τοῦ Ἀλεξάνδρου υἱὸς, παρθένον λαβών) ἀδελφῷ τῷ αὐτοῦ Ἀγρίππας Ἡρώδῃ δίδωσι, Χαλχίδος αὐτῷ τὴν βασιλείαν εἶναι αἰτησάμενος παρὰ Κλαυδίου.

β. Φάδου δὲ τῆς Ἰουδαίας ἐπιτροπεύοντος, γόης τις ἀνὴρ, Θευδᾶς ὀνόματι, πείθει τὸν πλείστον ὄχλον ἀναλαβόντα τὰς κτήσεις ἔπεσθαι πρὸς τὸν Ἰορδάνην ποταμὸν αὐτῷ. Προφήτης γὰρ ἔλεγεν εἶναι καὶ προστάγματι τὸν ποταμὸν σχίσας δίοδον ἔφη παρέξειν αὐτοῖς ῥαδίαν. Καὶ ταῦτα λέγων πολλοὺς ἠπάτησεν. Οὐ μὴν εἴασεν αὐτοὺς τῆς ἀφροσύνης ὄνασθαι Φάδος, ἀλλ' ἐξέπεμψεν ἴλην ἱππέων ἐπ' αὐτοὺς, ἣτις ἀπροσδόκητος ἐπιπεσοῦσα πολλοὺς μὲν ἀνείλε, πολλοὺς δὲ ζῶντας ἔλαβεν· αὐτὸν τε τὸν Θευδᾶν ζωγρήσαντες ἀποτέμνουσι τὴν κεφαλὴν καὶ κομίζουσιν εἰς Ἱεροσόλυμα.

γ. Ἄτε δὴ οὖν τοιοῦτος ὦν ὁ Ἄνανος, ὃν τὴν ἀρχιερωσύνην ἔφαμεν παρεληφέναι, θρασὺς ἦν τὸν τρόπον καὶ τολμητὴς διαφερόντως, αἵρεσιν δὲ μετῆι τῶν Σαδδουκαίων, οἵπερ εἰσὶ περὶ τὰς κρίσεις ὡμοὶ παρὰ πάντας τοὺς Ἰουδαίους, καθὼς ἤδη δεδηλώκαμεν. Ἄτε δὴ οὖν τοιοῦτος ὦν ὁ Ἄνανος, νομίσας ἔχειν καιρὸν ἐπιτήδειον, διὰ τὸ τεθνάναι Φῆστον, Ἀλβῖνον δὲ ἔτι κατὰ τὴν ὁδὸν ὑπάρχειν, καθίζει συνέδριον κριτῶν, καὶ παραγαγὼν εἰς αὐτὸ τὸν ἀδελφὸν Ἰησοῦ τοῦ λεγομένου Χριστοῦ (Ἰάκωβος ὄνομα αὐτοῦ), καὶ τινες ἑτέρους ὡς παρανομησάντων κατηγορίαν ποιησάμενος, παρέδωκε λυσθησομένους.

5. Explain the following words and phrases:

νεωτεριστής, ἰσοπολιτεία, ὕπατος, ἐθνάρχης, δημαρχικὴ ἐξουσία, μουνικίπιον, ὡς ἐν ἀπρόστατῇ πυλὶ ταῦτα ἐπράσσετο μετ' ἐξουσίας, ἡμῖν κινδύνων ἀπαλλαγὰς ψηφίσασθαι, πρόφασιν ἐκ προφάσεως ἀναρτῶντες.

SECTION III. HISTORY AND LITERATURE.

TUESDAY, June 9, 1885. 1.30—4.30.

A.

TATIAN, DISCOURSE TO THE GREEKS.

1. WHAT material may be collected from this treatise for a biography of Tatian? What do you understand by the epithet *Σύρος* which is applied to him? Give the leading data regarding the chronology of his life, and indicate divergent views as to the order of events.

2. Characterise this treatise as to the tone and mental attitude exhibited in it, and compare it in these respects with other early Apologies.

3. Translate with short notes

(i) Ὑπόθεσις δὲ αὐτοῖς τῆς ἀποστασίας οἱ ἄνθρωποι γίνονται. Διάγραμμα γὰρ αὐτοῖς ἀστροθεσίας ἀναδείξαντες, ὥσπερ οἱ τοῖς κύβοις παίζοντες, τὴν εἰμαρμένην εἰσηγήσαντο λίαν ἄδικον.

(ii) Ταῦτα δὲ ἡμεῖς προετίναμεν ὥσπερ ἐπὶ ὑποθέσεως· τὴν γὰρ ἡμετέραν περὶ τοῦ θεοῦ κατάληψιν οὐδὲ συγκρίνειν ὅσιον τοῖς εἰς ὕλην καὶ βόρβορον κυλινδουμένοις.

(iii) Τούτων οὖν τὴν κατάληψιν μεμνημένος καὶ πεποιημένος βούλομαι καθάπερ τὰ νήπια τῶν βρεφῶν ἀποδύσασθαι. Τὴν γὰρ τῆς πονηρίας σύστασιν εἰοικῖαν τῇ τῶν βραχυτάτων σπερμάτων ἴσμεν· ἅτε διὰ μικρᾶς ἀφορμῆς τούτου κρατυνθέντος, πάλιν δὲ αὐτὸ λυθησομένου, ἡμῶν κειθομένων λόγοις θεοῦ καὶ μὴ σκορπιζόντων ἑαυτούς. Διὰ τινος γὰρ ἀποκρύφου θησαυροῦ τῶν ἡμετέρων ἐπεκράτησεν, ὃν ὀρύττοντες κονιορτῷ μὲν ἡμεῖς ἐνεπλήθημεν, τούτῳ δὲ τοῦ συνεστάναι τὴν ἀφορμὴν παρέχομεν. Τὸ γὰρ αὐτοῦ πᾶν ἀποδεχόμενος κτῆμα τοῦ πολυτιμοτέρου πλούτου τὴν ἐξουσίαν ἐχειρώσατο.

4. Translate

Θελήματι δὲ τῆς ἀπλότητος αὐτοῦ προπηδᾷ λόγος· ὁ δὲ λόγος, οὐ κατὰ κενοῦ χωρήσας, ἔργον πρωτότοκον τοῦ πατρὸς γίνεται. Τούτον ἴσμεν τοῦ κόσμου τὴν ἀρχήν. Γέγονε δὲ κατὰ μερισμόν, οὐ κατὰ ἀποκοπήν· τὸ γὰρ ἀποτμηθὲν τοῦ πρώτου κεχώριται, τὸ δὲ μερισθὲν οἰκονομίας τὴν αἵρεσιν προσλαβὼν οὐκ ἐνδεᾶ τὸν ὅθεν εἴληπται πεποίηκεν. Ὡσπερ γὰρ ἀπὸ μιᾶς δαδὸς ἀνάπτεται μὲν πυρὰ πολλά, τῆς δὲ πρώτης δαδὸς διὰ τὴν ἐξαψιν τῶν πολλῶν δαδῶν οὐκ ἐλαττοῦται τὸ φῶς, οὕτω καὶ ὁ λόγος προελθὼν ἐκ τῆς τοῦ πατρὸς δυνάμεως οὐκ ἄλογον πεποίηκε τὸν γεγεννηκότα.

Discuss the doctrinal bearings of this passage in the light of later controversies.

5. Collect from this treatise any allusions to the tenets of the Stoics. What Christian doctrines does Tatian oppose to them?

6. Comment on Tatian's use of

θυτική, πρόλημα, ὑπόστασις, ζώσις, ἀποσκορακίζειν, ξύλον μαντικόν, ψελλισμός, τὸ πρωτόγονον, οἰκονομία, ἀξιοπιστία, θριαμβεύειν.

7. What ancient authors mention Tatian? What evidence is there as to the use of his Discourse during the next two centuries after it was written?

B.

S. AMBROSII DE SPIRITU SANCTO LIBRI TRES.

I. How may the date of this treatise be fixed? Give some account of the person to whom it is dedicated.

II. What former works on the same subject were known to S. Ambrose, and how far has he followed them? What is the main object of this treatise, and what are its main defects?

III. Translate accurately, with full notes,

(i) Baptizati sunt itaque in nomine Iesu Christi: nec iteratum est in his baptisma, sed nouatum; unum enim baptisma. ubi autem non est plenum baptismatis sacramentum, nec principium uel species aliqua baptismatis aestimatur. plenum autem est, si Patrem et Filium Spiritumque Sanctum fatearis. si unum neges, totum subrues. et quemadmodum si unum in sermone comprehendas, aut Patrem aut Filium aut Spiritum Sanctum, fide autem nec Patrem neque Filium nec Spiritum Sanctum abneges, plenum est fidei sacramentum, ita etiam quamuis et Patrem et Filium et Spiritum dicas, et aut Patris aut Fili aut Spiritus Sancti minuas potestatem, uacuum est omne mysterium.

(ii) At qui aliter putant, in illud sacrilegium recidunt, ut non distinguant Spiritum Sanctum, qui prolatium Verbum putant in Patrem redire, prolatium Spiritum in Deum refundi, ut unius refusio sit, et quaedam uicissitudo in uarias formas se saepe mutantis: cum Patris et Fili et Spiritus Sancti manens semper immutabilisque distinctio unitatem suae teneat potestatis.

(iii) Nec solum hoc loco euidenter Sancti Spiritus θεότητα, hoc est deitatem, scriptura testatur, sed etiam ipse Dominus dixit in euangelio, *Quoniam deus Spiritus est.* quem locum ita expresse, Arriani, testificamini esse de Spiritu, ut eum de uestris codicibus auferatis; atque utinam de uestris, et non etiam de ecclesiae codicibus tolleretis. eo enim tempore, quo impiae infidelitatis Auxentius Mediolanensem ecclesiam armis exercituque occupauerat, uel a Valente atque Ursatio, nutantibus sacerdotibus suis, incursabatur ecclesia Sirmiensi, falsum hoc et sacrilegium uestrum in ecclesiasticis codicibus deprehensum est. et fortasse hoc etiam in oriente fecistis. et litteras quidem potuistis abolere, sed fidem non potuistis auferre. plus uos illa litura prodebat, plus uos illa litura damnabat; neque enim uos poteratis oblinire ueritatem, sed illa litura de libro uitae nomina uestra radebat.

IV. What version of Holy Scripture did S. Ambrose use? Comment upon the text in **three** of the following passages as quoted by him:—

- (i) spiritus ante faciem nostram Christus dominus.
- (ii) ego antecedam te in nomine meo et uocabo in nomine meo dominum in conspectu tuo.
- (iii) hoc autem dicebat de Spiritu quem incipiebant accipere qui credituri erant in eum.
- (iv) accipietis uirtutem uenientem Spiritum Sanctum in uos.
- (v) nos enim sumus circumcisio, qui Spiritui Dei seruimus.
- (vi) apud uos manet, et in uobis est.

V. State the explanation given by S. Ambrose of the following texts, and the theological use which he makes of them:—

- (i) adorate scabellum pedum eius, quoniam sanctum est.
- (ii) Pater quod dedit mihi maius est omnibus.
- (iii) ille me clarificabit, quia de meo accipiet et annuntiabit uobis.
- (iv) apud te est fons uitae, et in lumine tuo uidebimus lumen.

Point out accurately the bearing of this treatise upon the Doctrine of the Double Procession.

VI. Write notes upon **five** of the following:—

- (i) secundum diuinitatem quidam Filium uisibilem putant.
- (ii) iniuriarum patientiam, quam erudiunt sacramenta baptismatis.
- (iii) Filius magni consilii angelus.
- (iv) uarietatem creatoris, quam Manichaeus inducit.
- (v) ideo in mysteriis interrogatio trina defertur, et confirmatio trina celebratur, nec potest quis nisi trina confessione purgari.
- (vi) non tres sancti.
- (vii) Hieremiam, quem de lacu Iudaicae domus ille assumptus a domino pannis et funibus eleuauit.
- (viii) inferiorem creaturam humanae condicionis.
- (ix) si...personaliter (si tamen dignum hoc uerbum est maiestatis expressione diuinae) de Spiritu accipias.

VII. How does S. Ambrose treat our Lord's Baptism, (a) in regard to the 'bodily shape' which appeared, (b) in regard to its effect upon our Lord?

SECTION III. HISTORY AND LITERATURE.

WEDNESDAY, *June* 10, 1885. 9—12.

THE ICONOCLASTIC CONTROVERSY,

WITH SELECTED ILLUSTRATIVE DOCUMENTS.

1. SKETCH briefly the political condition of East and West at the outbreak of the Iconoclastic controversy, stating clearly the extent of the Eastern empire at that time.

2. Explain the circumstances and trains of thought which led to the Iconoclastic movement. Which classes of society in the Eastern empire were, on the whole, in favour of, and which against, the worship of images?

3. What main arguments were employed by the defenders of image-worship? Discuss the justice of their appeal to the authority of the six general councils. How does Gregory meet Leo's argument on this point, and how does John of Damascus answer the argument drawn from the prohibition of the worship of idols in the Old Testament?

4. What, according to Gregory, and to John of Damascus, were the limits of imperial power in matters ecclesiastical?

5. Explain the allusions in the following:—"Vere et Ozias frater erat tuus, et eadem erat qua tu pertinacia praeditus, illiusque temporis sacerdotibus afferebat quam tu facis."

6. Give an abstract of the decrees of the second Nicene council concerning images. When was that synod held? What title did it give to Irene, and why? How far was the Church of Rome represented at the Council?

7. How does John of Damascus define *εἰκόν*, and how does he distinguish between *προσκύνησις* and *λατρεία*? How does he deal with the testimony and example of Epiphanius?

8. Translate the following, explaining the historical allusions and phrases:—

Ἐν δὲ τῇ κατὰ Συρίαν Δαμασκῷ Ἰωάννης ὁ Χρυσορρόας, πρεσβύτερος καὶ μοναχός, ὁ τοῦ Μαισούρ, διδάσκαλος ἄριστος, βίῃ καὶ λόγῳ προέλαμπεν. Ἀλλὰ καὶ Γερμανὸν μὲν ὡς ὑπ' αὐτὸν ὄντα ἐκβάλλει τοῦ θρόνου Γρηγόριος δὲ δι' ἐπιστολῶν ἀριδύλως αὐτὸν ἐλέγχει τῶν τοῖς πολλοῖς ἐγνωσμένων. Καὶ Ἰωάννης σὺν τοῖς τῆς ἀνατολῆς ἐπισκόποις τοῖς ἀναθέμασι τὸν ἀσεβῆ καθυποβάλλει. Τῇ δὲ ζ' τοῦ Ἰανουαρίου μηνὸς τῆς γ' ἰνδικτιῶνος ἡμέρᾳ γ' τῆς ἐβδομάδος Λέων ὁ δυσσεβὴς σελέντιον κατὰ τῶν ἀγίων καὶ σεπτῶν εἰκόνων ἐκρότησεν ἐν τῇ τριβουναλίῳ τῶν ἰθ' ἀκουβίτων, προσκαλεσάμενος καὶ τὸν ἀγιώτατον πατριάρχην Γερμανὸν, οἰόμενος πείθειν αὐτὸν ὑπογράψαι κατὰ τῶν ἀγίων εἰκόνων.

9. By what Western synod, and under whose influence, were the decrees of the Nicene synod rejected? Give a sketch of the argument in the Caroline books. To whom are the Caroline books attributed?

10. "Theodore Studites, one of the warmest Iconoclasts of the age" (Gibbon, *Decline and Fall*, ch. 49). Discuss the correctness of this statement, and explain its probable origin.

OR

Discuss Neander's accusation of untruthfulness against Gregory for saying that many kings in the West had asked for Baptism, and that he had sent Bishops to them.

11. What is meant by ἀχειροποίητα, νέος Μωαμέθ, laurata, πίνακες ἄγιοι, κατηχούμενα, κυνήγιος, λείψανα?

12. Compare the attitude of Charles the Great in reference to images (1) with that of Leo the Isaurian, (2) with that of the Pope.

13. To what decision has the Eastern Church ultimately come regarding image-worship? Explain what is meant by an *Icon*.

SECTION III. HISTORY AND LITERATURE.

WEDNESDAY, *June* 10, 1885. 1.30—4.30.

THE LIFE OF QUEEN ELIZABETH,

WITH SELECTED ILLUSTRATIVE DOCUMENTS.

1. WHAT circumstances, foreign and domestic, combined to prevent any opposition to Queen Elizabeth's accession?

2. Describe Elizabeth's attitude towards the Reformation movement at her accession. How far was she then in sympathy with the various previous efforts for Reformation in England? By what political circumstances was she ultimately constrained to take up her position?

3. How does the Act of Uniformity of Elizabeth's reign differ from that of 1562? What provisions in it were due to the queen's personal influence, and to what subsequent controversy have these provisions led? Explain the questions in dispute.

4. What was the nature of the questions intended to be set at rest by the Act 8 Elizabeth c. 1 "Of the making and consecrating of archbishops and bishops," and what informality in connexion with the first consecrations was corrected by this statute?

5. Give some account of the "Advertisements" of 1564, and a history of the attempts at regulation by authority which preceded them. What was their effect as an exercise of the power given by the Act of Uniformity, and what difficulty did Parker find in bringing them into operation?

6. Draw out of the Parker correspondence illustrations of the social position, personal character, manner of life, and attainments, of the clergy during the first half of Elizabeth's reign.

7. Point out the gradual increase in severity of the laws against Roman Catholics in this reign, giving the date of each new enactment, and the reasons for it. How were Parker and Cecil disposed towards the Queen of Scots after she had taken refuge in England? Give an account of the dangers which they believed to be imminent from her presence in the country.

8. Write a sketch of the Presbyterian movement in England from 1572 to the end of Elizabeth's reign.

Give a notice of the "Admonition to the Parliament" and also of the "Second Admonition," with some account of the controversy to which the latter gave rise. What danger was apprehended to the State in Elizabeth's time from the tenets adopted by the Puritans?

9. Compare the characters of Grindal and Whitgift as primates, illustrating your comparison from the conduct of the former in respect of the "Prophesyings" and of the latter in the matter of the "Lambeth Articles."

10. What were the most important works written against the Puritan movement in the latter half of Elizabeth's reign? Give a short account of the subjects of the writings which you mention.

11. Compare the condition of the Reformed Church in England and in France at the time of Queen Elizabeth's death. Point out in each case the causes to which that condition was due, and how far they have continued to operate in later times.

12. Explain the following terms occurring in the Elizabethan Statutes: corporal oath—suing livery or *oustre le maine*—the statute of provision and *Praemunire*—a benefice impropriate—corrodies—protonotaries and philizers—put in ure—misprision of treason—no essoin, protection or wager of law shall be allowed—by copy of court roll—headborough or tithing-man.

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SPECIAL EXAMINATION IN MORAL SCIENCES FOR THE ORDINARY B.A. DEGREE.

FRIDAY, June 5, 1885. 9—12.

POLITICAL ECONOMY. I.

1. UNDER what conditions is Value determined by Expenses of Production? Illustrate by reference to (a) the price of iron, (b) the price of patent medicines.
 2. How would you define *unskilled* labour? What are the principal circumstances upon which the demand for unskilled labour at any time depends?
 3. Explain briefly the meaning of the following:—*Personal Wealth, Auxiliary Capital, Standard of Comfort, Final Utility, Appreciation of Gold, Real Wages, the Money Market.*
 4. How do Rent, Interest and Profits resemble and differ from one another? Explain the statement that "Rent of rare natural abilities is a specially important element in the incomes of many business men."
 5. What may be the ultimate consequences of a successful strike? Distinguish between different cases.
 6. Distinguish between Industrial Partnership and Co-operative Production; and compare their advantages.
 7. Analyse the meaning of the term *Competition*; and examine some of the economic effects of thoroughgoing industrial competition.
 8. Shew what connection, if any, there is between each of the following and each of the others:—(a) the Bank Rate of discount; (b) the price of Consols; (c) the current rate of interest on a good mortgage; (d) the price of land.
 9. What is the influence exerted by Banks on prices? Are the present low prices advantageous to the community?
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FRIDAY, June 5, 1885. 1—4.

POLITICAL ECONOMY. II.

1. Discuss the advantages and disadvantages of recognising a right of private property in the land of a new country; and examine what justification there is for the rights of inheritance and of bequest.

2. Give some account of the moral and economic advantages of the system of peasant proprietary as found on the Continent; and discuss how far it seems probable that a similar system would answer in Ireland or England.

3. What was the doctrine of Malthus as to the increase of population? Indicate any changes in the strength of the positive or preventive checks to population in England which have taken place since his time.

4. "Labour is the cause of value."

"Things are more or less valuable according as they are more or less scarce."

"The utility of a thing is in the last resort the source of its value."

"Value is not a quality but a ratio."

Discuss how far these various statements are true, and how far they can be reconciled.

5. What are the disadvantages of a double standard for coinage within the same country, and of distinct standards in different parts of the commercial world?

6. Explain carefully how credit resembles and how it differs from capital.

7. Under what circumstances can one country undersell another? and on whom would the loss chiefly fall?

8. What do you understand by equality in taxation? Discuss the fairness and wisdom of a graduated property-tax.

9. Trace out where the burden (*a*) of tithes, (*b*) of a tax on unskilled labourer's wages, (*c*) of a tax on ground rents, really falls.

10. Discuss the question whether it is wise for the State to interfere with individual action by such measures as the Poor Laws, the Factory Acts, or the Education Acts. State the case against such measures fully.

SATURDAY, June 6, 1885. 9—12.

POLITICAL ECONOMY. III.

1. WHAT hindrances have interposed to prevent the actual progress of the world from following the lines of the natural progress of opulence delineated by Adam Smith?

2. If the rate of Exchange between England and Holland be five per cent. against England, how will the balance of trade between the two countries be affected?

3. Are there any ways in which money differs from other sorts of wealth? How far do these differences excuse or justify the regulations of the Mercantile System?

4. Explain carefully the following terms:—bounty,—drawback,—bank of deposit,—seignorage,—enumerated commodities,—the herring buss bounty,—*dépenses foncières*,—excise.

5. Mention instances where the interest of (a) Merchants, (b) Manufacturers, (c) Landlords, has been promoted by measures that were prejudicial to the wealth of the community generally.

6. What is the economic advantage to any country of the possession of colonies? State and discuss some of the mistaken views that have prevailed on this subject.

7. What objections did Adam Smith take against the success of Joint Stock Undertakings? How far do these apply to the management of industry by the State?

8. Give some account of the Navigation Laws. What was their object? How far were they successful, and why were they repealed?

9. Discuss the arguments in favour of (1) temporary protection of industry in a new country, (2) reciprocity in the duties imposed by trading countries on each other's manufactures.

MORAL SCIENCES TRIPOS.

PART I.

MONDAY, May 25, 1885. 9—12 A.M.

PSYCHOLOGY.

1. Discuss carefully the grounds on which it has been maintained that the primitive and irreducible constituents of mental life are of three distinct kinds, viz. (1) cognitive, (2) emotional, i.e. of the nature of feeling, and (3) volitional or active. Characterize these in relation to each other, (a) at an early and (b) at a relatively advanced, stage of development.

2. "*Unconscious mental activity*;" "*Latent mental modifications*;" "*Subconsciousness*." Explain in what sense you understand these terms, enumerate the leading facts cited in support of the hypothesis so named and discuss its legitimacy.

3. Distinguish (1) Touches, (2) Muscular Tensions and (3) Movements; and point out how they jointly and severally contribute to our perception of an external world.

4. What do you understand by qualitative distinctions among Feelings?

In what relation to Feeling as a whole do you place Emotion? Explain what you mean by (a) the Expression, (b) the Repression of Emotion.

5. Define the terms Retentiveness, Memory and Recollection. Compare together the "re-presentations" concerned in Perception, in Imagination and in Generalisation.

6. How would you distinguish (a) Thinking and Knowing, (b) Thinking and Believing, (c) Knowing and Believing? What criticism would you pass, from the point of view of psychology, on the following?

(1) Seeing is Believing.

(2) "There his spirit shaped
Her prospects, nor did he believe—he *saw*."

(3) I believe I saw him yesterday.

7. Give a *psychological* account of Judgment, and discuss the connexion (1) between judgment and "feelings of relation" and (2) between judgment and association of ideas.

8. Discuss in relation to each other the facts termed (1) Impulse, (2) Desire, (3) Resolution.

9. Describe fully the data involved in the recognition of the Body as distinct from extra-organic things, and give an account of the manner in which you conceive the recognition to come about.

MONDAY, May 25, 1885. 1—4 P.M.

LOGIC AND METHODOLOGY.

1. STATE briefly the ordinary doctrine of opposition. Do you think that contradictory or contrary opposition obtains between Terms (or Notions)?

Comment on the following: "In singularibus propositionibus alio modo se res habet. Nam oppositio in his neque est contraria neque subcontraria, neque subalterna, sed solum contradictoria."

What do you say of the view advanced by some early logicians that valid contradictory opposition in singular propositions demanded quantification of the predicate?

2. Examine critically the distinction between Judgments in Extension and Judgments in Comprehension.

3. 'Syllogism always means a movement of thought that uses what is given for the purpose of advancing beyond it.' Criticise this and give a statement of the relation which you think obtains between the premisses and the conclusion of a syllogism.

4. Shew diagrammatically that—as regards extension—five and only five relations are possible between two terms, and give a verbal statement of the resulting propositions, adding whatever explanations you think called for. Having three terms *X*, *M*, *Y*, combined into two categorical propositions, shew directly—i.e. without reference to syllogistic rules—that there are only three such combinations that leave the relations subsisting between *X* and *Y* wholly indeterminate. What conclusion would you draw from the following: All *M* is some *Y*, some *X* is all *M*? Justify your answer.

5. Explain what you understand by Causation; and in so doing take account of the terms Agent, Patient, State, Event, Condition, Positive and Negative Conditions.

"From a limited number of unconditional sequences," says Mill, "there will result a much greater number of conditional ones." How are we to know what sequences are really unconditional; and, apart from this, how can we know that the so-called laws of nature are not empirical laws?

6. Consider the relation of the method of Concomitant Variations to the method of Difference, the circumstances which render its application necessary, its scope, and the kind of conclusion it warrants.

7. Explain the relation of Logical Division to Scientific Classification. What constitutes a classification natural? What do you understand by a Diagnosis (or Diagnostic Classification) and what by the phrase *sui generis*?

8. Define and distinguish Hypotheses, Facts and Principles. How can hypotheses be tested and verified? Can you represent such verification in the form of a hypothetical syllogism?

9. Examine the following, giving the technical name of any fallacy you think you can discover:

(a) You do not know what I am going to ask you about. Now I am going to ask you about the nature of the fallacy called *Ignoratio Elenchi*. It seems therefore you do not know the nature of the fallacy called *Ignoratio Elenchi*.

(b) Every event becomes in the order of time a past event. A past event is unalterable; it cannot be otherwise than it has been. A future event differs from a past event only in order of time, and time itself is not a cause that alters events. Future events, therefore, are, like past events, unalterable. All events then are necessary.

(c) The cause must either precede the effect, or be simultaneous with it, or succeed it. The last supposition is absurd; and the second would render it impossible to distinguish the cause from the effect. On the first supposition the cause must cease before the effect comes into being; but, surely, that which is not cannot be a cause. Either, then, there is no cause for any effect, or we are unable to discover it.

TUESDAY, May 26, 1885. 9—12 A.M.

METAPHYSICS.

1. DEFINE Metaphysics: explaining especially the distinction between Metaphysics and Psychology. Examine the relation of Perception to Conception from a metaphysical point of view.

2. Discuss the following statement:

"To assert the inconceivableness of the negation [of a cognition] is at the same time to assert the psychological necessity we are under of thinking it and to give our logical justification for holding it to be unquestionable."

3. Consider how far the proposition

"that in the phenomena of nature what is to be will probably be like to what has been in similar circumstances"

is to be regarded as (a) true, (b) not grounded on antecedent reasoning.

4. "Does the *external world really exist*?"

Analyse concisely the meaning of each of the words italicised in the above question: and compare the answers given to it by any two of the following: Reid, Kant, J. S. Mill.

5. Discuss the following:

"The inexplicable tie or law which connects the present consciousness with the past one of which it reminds me, is as near as I think we can get to a positive conception of self. That there is something real in this tie, real as the sensations themselves, and not a mere product of the laws of thought without any fact corresponding to it, I hold to be indubitable."

6. Explain and criticize the following:

"Kant has clearly shown that the Idea of the Unconditioned can have no objective reality...but he ought to have shown that the unconditioned is self-contradictory, because it is not a notion, either simple or positive, but only a fasciculus of negations."

7. Examine the following:

"Our senses give us a direct and distinct notion of the primary qualities, and inform us what they are in themselves. But of the secondary qualities, our senses give us only a relative and obscure notion."

8. Examine the mutual relations of the conceptions (1) Continuous Quantity, (2) Discrete Quantity or Number, (3) Extensive Quantity, (4) Intensive Quantity. Do we know, and if so, how do we know that all these four conceptions must be capable of being predicated of every phenomenon?

TUESDAY, May 26, 1885. 1 to 4.

MORAL AND POLITICAL PHILOSOPHY.

1. SELECTING any case of moral judgment, define carefully the matter concerning which the judgment is passed, note any peculiarity in the form of the judgment, and discuss the significance of the predicate.

2. Why do you think the question of disinterested action has played so large a part in ethical discussion? Compare and discuss the views of Hobbes and Butler on the question.

3. Discuss fully the objection of circular reasoning advanced against Butler's view of the relation between Conscience and Virtue.

4. State and briefly examine the manner in which Kant connects the notions of Freedom, objective rightness, and final end of rational action.

5. What do you understand by a moral *ideal*? Consider fully the conditions involved in the formation of an ideal. Do you think it correct to say that moral ideals are liable to constant change? Does the possibility of such change seem to you reconcilable with the assignment of objective character to moral distinctions?

6. 'A prince, therefore, who is wise and prudent, cannot or ought not to keep his parole when the keeping of it is to his prejudice and the causes for which he promised removed.' *Macchiavelli*.

Compare the criticisms that would be passed on this statement by (a) Intuitionists and (b) Utilitarians respectively.

7. Are *legal right* and *legal duty* strictly correlative and coincident conceptions? Give reasons fully.

8. By what principles should the division of labour between the central government and local bodies be determined in a nation governed by representative institutions?

9. 'Possession after a certain period fixed by the law ought to prevail over all other titles to property.' *Bentham*.

State and examine the grounds of this assertion, with special reference to the case of land.

WEDNESDAY, May 27, 1885. 9—12 A.M.

POLITICAL ECONOMY (ELEMENTARY).

1. GIVE and criticise Mill's definition of Capital. Examine the effects of large loans for war, subscribed within any country, on the rate of interest and wages; and consider by what principles a government should be determined in resorting to loans or taxation.

2. State the Ricardian theory of Rent in its purely theoretical form, making clear the assumptions on which it is based.

Consider how far any of these assumptions require to be verified by an appeal to facts; referring especially to the alleged tendency of rents to rise with the progress of society.

3. Analyse profits, and examine the grounds on which it has been held that profits tend to a minimum. How is the minimum determined?

4. Explain the causes by which (1) the price of a foreign bill of exchange, and (2) the limits within which this price fluctuates, are determined. What effects, immediate and ultimate, would probably result from the adoption by a country of an inconvertible paper currency?

5. Explain, giving precise definitions of the terms, the statement that the *value of money* varies inversely as its quantity multiplied by its *rapidity of circulation*, and state the conditions necessary to make the law hold good.

Illustrate the importance of the conditions assumed by reference to the movement of prices in a commercial crisis.

6. Do the earnings of any industrial group (a) at any particular time, (b) over a long period, depend on the price obtained for the commodity produced by that group, or is the price of the commodity determined by the rate of earnings? Point out the hypotheses involved in each case.

7. What are the principal evils involved in taxes on commodities? In what cases may such taxes fall on producers? Examine the incidence of a tax of half a farthing on every pint of beer of whatever quality: supposing the tax to be collected from the brewers.

8. What are the principal requisites of a good system of coinage? Examine the economic grounds on which the different functions of the State in respect to coinage are based.

Why do some systems of Socialism wish to abolish the use of money?

9. Examine the hypotheses on which it is maintained that for any country (a) at any time, (b) over a long period, Free Trade is *economically* advantageous.

Consider any practical qualifications you think requisite in reference to the mobility of capital and labour, the exhaustion of natural resources and the variety and kind of industries.

WEDNESDAY, May 27, 1885. 1—4 P.M.

GENERAL QUESTIONS.

[*Not more than eight questions are to be attempted.*]

1. MAKE a psychological analysis of what is called Common-Sense.
2. Distinguish the various meanings that have been given to Relativity as a psychological term, and explain what you take to be the Law of Relativity.
3. What do you understand by an Observation as distinguished from an Inference? Discuss the mental conditions of correct and trustworthy observation and the bearings of these on the value of Testimony.
4. Explain what is meant by the Law of Continuity. On what kind of evidence does it rest? Discuss and illustrate the following:—The Law of Continuity is a test of truth rather than an instrument of discovery.
5. Define "Life" and "Mind" and examine the relations between the two notions. Consider the meaning of "Evolution" as applied to the phenomena of Inanimate Matter, Life, and Mind respectively.
6. Discuss the proposition "that only phenomena can be known". It has been said that it is impossible to prove this proposition without at the same time proving its contradictory; since the impossibility of knowing more than phenomena is not a phenomenon, and therefore this impossibility itself cannot be known if we can only know phenomena. Examine this argument.
7. Explain concisely what you understand by Moral Responsibility and Freedom of Will; and consider their relation to each other.
Is it compatible with the idea of Freedom to say that motives are the outcome of circumstances and character?
8. Determine, on economic principles or otherwise, the extent of compensation that should be given to persons whose pecuniary interests are disadvantageously affected by changes in legislation or other measures of government: distinguishing different cases.
9. Supposing it accepted as a fundamental principle that government should interfere as little as possible with the freedom of action of individuals, consider the subordinate or secondary principles on which (a) the law of intestate inheritance and (b) bankruptcy law should be regulated, in order to carry out the fundamental principle above-mentioned.
10. Explain and illustrate the meaning of the assertions (a) that economic laws have been "violated," or (b) that their operation has been "suspended" or (c) "disturbed"; and examine the propriety of these phrases.

MORAL SCIENCES TRIPOS.

PART II.

THURSDAY, *May* 28, 1885. 9—12 A.M.

ANCIENT PHILOSOPHY.

1. EXAMINE briefly the relation of Plato's philosophy to the doctrines of Heraclitus and Parmenides respectively.

2. Examine Plato's view of the true method of philosophy; and its relation (*a*) to the method of such a science as geometry, and (*b*) to practical reasoning.

3. Explain Aristotle's classification of causes: and discuss the extent to which his distinctions were recognised by Plato, explicitly or implicitly.

4. Discuss Plato's view of the nature of soul (*ψυχή*). In what sense, and on what grounds, did he hold it to be immortal? Examine the consistency of his doctrine on this point with the rest of his philosophy.

5. Explain the antitheses *εἶναι*, *γίγνεσθαι*; *πέρας*, *ἄπειρον*; *ταὐτόν*, *θάτερον*: and discuss their importance in Plato's philosophy.

6. Discuss carefully the Platonic view of matter and the relations in which matter as conceived by him stood (*a*) to the particularizing element in sense perceptions, (*b*) to the ideas.

7. "A still further step has been made when the most abstract notions, such as being and not-being, sameness and difference, unity and plurality, are acknowledged to be the creations of the mind herself, working upon the feelings, or impressions of sense."
JOWETT.

Examine this passage; and give a general statement of Plato's view in regard to the relation of ideas to the thinking mind, referring to the various dialogues in which this question is treated.

8. Discuss the place of the idea of the Good in the Platonic system.

9. Give some account of Plato's views as to the origin and elementary constitution of the physical universe; and discuss the degree of importance that he attached to them.

THURSDAY, *May* 28, 1885. 9—12 A.M.

POLITICAL ECONOMY (ESSAYS).

Essays are to be written on two or three of these subjects.

1. GIVE a critical account of Mill's Theory of International Values and examine the bearing of this theory—or any other theory which assumes perfect industrial competition within but not beyond the limits of a country—on the incidence of Export and Import Duties.

2. Examine the advantages and limitations in the use of the Historical Method in Political Economy, and give illustrations from each of the departments Production, Distribution, Exchange, of the modifications of economic theories due to historical investigation.

3. Examine the Malthusian theory of Population, especially with the view of determining its bearing upon the economic condition of this country at present and the possibility of a further approximation to Socialism.

4. Discuss the importance of statistics in dealing with questions of economic theory: and illustrate your general view by special reference to questions of currency and finance.

5. Consider the adaptation of different historic modes of land-tenure to different (past) stages of social and industrial development: illustrating by reference to the open field system of cultivation as it existed in England in the middle ages.

6. Discuss the economic advantages and the economic drawbacks or difficulties of Industrial Partnership.

THURSDAY, May 28, 1885. 1—4 P.M.

HISTORY OF MODERN METAPHYSICAL PHILOSOPHY.

1. EXAMINE (a) the meaning, (b) the grounds, and (c) the value of Berkeley's view that 'we know not the soul by ideas.' Compare his doctrine on the point with the views of Hume and Kant.
 2. Compare the views of Locke and Berkeley respectively concerning "abstract ideas."
 3. Discuss the doctrines of Locke, Berkeley and Hume respectively concerning the mathematical conception of Infinity and Infinitesimals. Explain how you would resolve their several difficulties.
 4. Examine carefully Berkeley's view of physical causation and the legitimacy of the distinction he draws between physical and spiritual causation. Connect his view with the discussions of the same question in the Cartesian philosophies, and consider whether his principles enable him to evade the theory that all causation is operation of the divine mind.
 5. In what sense and on what grounds did Descartes assume the existence of Innate Ideas? Was Locke's polemic an *ignoratio elenchi* or not? What do you take to be the meaning of Leibniz's reply:—*Nihil est in intellectu quod non fuerit prius in sensu nisi intellectus ipse?*
 6. 'All our ideas are copied from impressions.' Examine this principle and the applications made of it by Hume, taking note of any exceptions to it you find either avowed or assumed by Locke and Berkeley, and of Hume's treatment of such exceptions.
 7. Explain (1) Hume's distinction of Natural and Philosophical relations, and (2) his distinction between demonstration and probability. As regards the latter, compare his doctrine with that of Locke concerning the certainty of general and particular propositions and that of Kant concerning mathematical and dynamical categories.
 8. State and examine Hume's account of the origin of the idea of Power and his objections to the view that it is derived from reflection on the operations of our own minds.
 9. Explain the Kantian distinction between Judgments of Perception and Judgments of Experience and discuss the use Kant makes of it in his Theory of Knowledge.
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THURSDAY, *May* 28, 1885. 1—4 P.M.

ADVANCED LOGIC AND METHODOLOGY (ESSAYS).

[Select *three* of the following.]

1. THE significance of logical relations: is it subjective or objective?
 2. The grounds for the distinction between Matter and Form of thought, and the principles that have been applied in developing a purely Formal Logic.
 3. The place and function of Definitions, in science generally and in mathematics in particular.
 4. The Baconian method in its leading features: Bacon's conception of science contrasted with Aristotle's, Descartes', or Comte's.
 5. A critical comparison of the views of J. S. Mill, Whewell and Jevons concerning Induction.
 6. The conception of a Logic of Relatives and the possibility of its realization.
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FRIDAY, *May* 29, 1885. 9—12 A.M.

HISTORY OF MODERN ETHICAL AND POLITICAL PHILOSOPHY.

1. EXPLAIN Locke's general view of the rights and obligations of individuals in a state of nature, according to the Law of Nature; and notice any peculiarities in his view. Consider its relation to his conception of the rights and obligations of private individuals in a justly ordered political society.

2. Examine Locke's view of the different functions of government, and of the proper allotment of these functions to different bodies or individuals; and compare it with the view of Rousseau or any recent writer.

3. Examine Hume's view as to (a) the historical origin of government, (b) the grounds and limits of the duty of civil obedience, and (c) the relation between (a) and (b). Compare the view of Paley on each of these points.

4. Examine Montesquieu's definition or definitions of Liberty and his account of the realisation of Liberty in the British Constitution; and compare Paley's views on both points.

5. Explain and discuss Montesquieu's distinction between monarchy and despotism; and examine (a) his view of the social, territorial or other conditions required to render monarchy possible or expedient.

6. Compare the views of Hume and Montesquieu as to the importance of commerce to government, and the proper governmental regulation of commerce.

7. Examine Rousseau's conception of the State of Nature. To what extent did he hold that Natural Right (a) was realised in the State of Nature, (b) could be realised in the Social State? and what were the essential conditions of the latter realisation so far as possible?

8. Examine Godwin's view of the characteristics of Democracy, and of the ultimate ideal towards which the organisation of democratic society ought to progress; comparing it with Rousseau's view.

9. In what sense is Godwin a Utilitarian? Compare his ethical view generally with that of Hume or Bentham: and examine especially his view of the justice of legal punishment.

FRIDAY, May 29, 1885. 9—12 A.M.

ANCIENT PHILOSOPHY. (ESSAYS.)

[Essays should be written on either two or three of these subjects.]

1. A COMPARISON of Plato's political ideal with that of any other thinker.
 2. A comparison of Plato's doctrine of the Virtues with that of (a) Aristotle, and (b) the Stoics.
 3. A history of the notion of Pleasure in Greek philosophy, with special reference to Epicureanism.
 4. The development of Plato's theory of Ideas, as exhibited in different dialogues.
 5. The positive and negative relations of Aristotle's metaphysical system to Plato's.
 6. Post-Aristotelian scepticism: and its relation to Socrates and Plato.
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FRIDAY, May 29, 1885. 1—4 P.M.

ADVANCED PSYCHOLOGY AND PSYCHOPHYSICS.

1. EXAMINE the evidence adduced to shew that most of our existing sensations are psychically complex, explaining in what sense you understand the phrase "psychical complexity." Also discuss the chief views current concerning the development of our present sensations from simpler ones.
 2. Describe the leading facts known as Visual Induction and Contrast, both monocular and binocular; also examine the explanations of facts of this kind offered by Helmholtz, Hering and Wundt respectively.
 3. Examine psychologically the distinctions that may be drawn between (a) tactual space, (b) visual space, (c) space as imagined, (d) space as conceived.
 4. Expound your views concerning Instinct and discuss the connexion between Instinct and Imitation.
 5. Give an account of recent experiments on Reaction-time so far as these may throw light on the nature and conditions of Voluntary Attention.
 6. Describe briefly the facts known as (1) Atactic Aphasia, (2) Amnesic Aphasia, (3) Word Blindness, (4) Word Deafness, and discuss their bearing upon psychological inquiry.
 7. Discuss the difficulties that lie in the way of a general theory of Pleasure and Pain.
 8. Analyse carefully the notion of *self-consciousness*. If the fact so named seems to you to exhibit differences of content or form at different stages in the mental life of an individual, give an account of its variations and refer them to their conditions.
 9. Define Presentation and consider in what relation it stands to the activity of Thought.
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SATURDAY, May 30, 1885. 9—12 A.M.

ADVANCED LOGIC AND METHODOLOGY.

1. EXAMINE some of the chief objections that have been made to the Law of Excluded Middle (*Omne A est aut B aut non-B*), and explain your own views as to its place and appropriate statement as a logical principle.

2. Comment on the following passages, discuss generally the problem involved in them, and give a brief historical notice of the place assigned to Hypotheticals in logical theory:

(a) 'What are called Hypothetical Propositions and Syllogisms are no more hypothetical than others. They are only hypothetical as elliptical.'

HAMILTON.

(b) 'A *categorical* proposition, and an *hypothetical* answering it, do both signify the same, if the propositions be necessary; but not if they be contingent.'

HOBBS.

3. Critically examine various views as to the significance and place of Modal Judgments. Give, with reasons, your view of the distinction logically recognizable between possible and necessary, with their opposites, and consider the bearing of your view on the fundamental principles of the theory of probabilities.

4. Discuss the possible interpretations of $\frac{x}{y}$ in symbolic logic.

5. Explain and discuss the logical significance of Boole's general method for Elimination. Contrast logical and algebraical Elimination and consider how far 'Elimination' is of the essence of reasoning.

6. 'Every truth is reducible to a selfevident or an identical proposition, and every error to a contradiction.'

Discuss fully.

7. Discuss the general principles of statistical reasoning.

8. In reducing observations what is meant by an Error and by a Law of Error? What also is meant by *the* Law of Error? Explain the relation to it of the Methods of Means and of Least Squares.

9. Explain and discuss the following "criterion of consistency":—"Any two or more terms are contradictory when, and only when, after all possible substitutions are made, they occasion the total disappearance of any term, positive or negative, from the Logical Alphabet."—JEVONS.

SATURDAY, May 30, 1885. 9—12 A.M.

HISTORY OF MODERN METAPHYSICAL PHILOSOPHY.

SUBJECTS FOR ESSAYS.

[Two or three to be selected.]

1. COMPARE critically the methods applied by Locke and Kant to the solution of the problem regarding the nature and limits of Knowledge.

2. Discuss the following:—"In Locke we find an unstable equilibrium between two irreconcilable tendencies—towards a sensationalist theory of knowing and towards a materialist theory of being. His greatest disciple, Berkeley, at once preferred the former doctrine, and employed it mainly as a weapon against the latter."

3. Discuss the significance of the passage from Hume:

"In short there are two principles which I cannot render consistent, nor is it in my power to renounce either of them; viz. *that all our distinct perceptions are distinct existences* and *that the mind never perceives any real connexion among distinct existences.*"

4. State and compare in detail the views of Leibniz and Kant on (a) space-relations, (b) interaction among real existences.

5. Compare critically Berkeley's ultimate metaphysical conception with that of Kant.

6. Contrast the procedure of Reid and Kant respectively in dealing with Hume's scepticism; and also state and examine Kant's strictures upon the appeal to common-sense in philosophical matters.

SATURDAY, May 30, 1885. 1—4 P.M.

POLITICAL ECONOMY (ADVANCED).

[In answering these questions candidates are at liberty to use diagrammatic or symbolical methods wherever they think them appropriate. Due credit will be given for any additional exactness of reasoning that may be thus attained.]

1. EXPLAIN by a general formula or otherwise how changes in the rate of interest, or in the average wages of manual labour, will affect relative values; and examine the effect on values of the imposition of an *ad valorem* tax on all commodities.

2. How does Rent resemble and differ from Interest? Under what circumstances, if any, would you consider a rise in the gross rental of a country as a sign of economic prosperity or the reverse?

3. It is asserted that at present an appreciation of Gold is taking place owing to the diminution in the annual supply, but it is objected that the low level of the Rate of Discount in the great commercial countries and the abundance of metallic currency show that the falling off in the Gold supply cannot account for the present low level of prices. Examine these statements and give your own opinion on the causes of the general fall in prices.

4. Describe the characteristics, and examine (with historical illustrations) the principal causes of commercial crises.

5. Why did Adam Smith consider the monopoly of the Colonial Trade disadvantageous? Would the same arguments apply now and what other arguments might be advanced against such a monopoly?

6. State briefly the grounds on which the Bank charter act of 1844 was passed. What effect (if any) has it had (a) on the average Bank rate of discount and (b) on fluctuations in the rate? Would the general adoption of Bimetallism tend to diminish such fluctuations or to lower the average rate?

7. Discuss the principal points of resemblance and contrast between a modern Trades-union and a mediæval Craft-guild; considering (a) the ends aimed at and (b) the adaptation of means to ends in both cases.

8. Compare the views of Mill and Jevons on the determination of Market Values.

9. Examine the incidence of a local *ad valorem* tax on land and houses, varying considerably and abruptly from district to district, but generally tending to be higher in proportion to density of population.

MONDAY, June 1, 1885. 9—12 A.M.

ADVANCED PSYCHOLOGY AND PSYCHOPHYSICS.

[SELECT two or three of the following.]

1. AN account of the steps by which common thought advances to the conception of a Soul or Mind; discussion of the scientific meaning of the conception and an examination of the prevalent theories concerning it.
 2. Psychical intensity:—its precise meaning; the assumptions involved in proposing to measure it at all; the special assumptions involved in Fechner's indirect methods of measurement; and the interpretations that have been offered of Weber's Law.
 3. A critical *resumé* of the current controversy concerning the functions of the cerebral hemispheres.
 4. A brief history and a critical estimate of the Associationist psychology.
 5. The relation of Psychology to Philosophy generally, and more particularly its relation (1) to Epistemology and (2) to Ontology.
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MONDAY, June 1, 1885. 1—4 P.M.

HISTORY OF MODERN ETHICAL AND POLITICAL PHILOSOPHY
(ESSAYS).

[Essays should be written on either two or three of these subjects.]

1. THE sources of modern political theory; with special reference to the influence of (1) Greek philosophy, (2) Roman Law.
 2. The Patriarchal Theory, as expounded and criticised by different writers.
 3. Differences and changes in the views held, in 17th and 18th centuries, as to the rightful (*a*) causes and (*b*) effects of war.
 4. The mutual action and reaction of political theory and political facts in England or France in the 18th century.
 5. The relation of ethical to political theory in English thinkers in the 18th century.
 6. A comparison between the conception of the Law of Nature, and the conception of social evolution, regarded as furnishing ideals for government.
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SPECIAL EXAMINATION IN MODERN LANGUAGES FOR THE ORDINARY B.A. DEGREE.

FRIDAY, *June 5*, 1885. 9—12.

CHAUCER: PROLOGUE, MAN OF LAW'S TALE, AND CANON'S YEOMAN'S TALE.

1. MENTION some of the principal works of Chaucer; also any poems commonly inserted in the editions, but not written by him. What dates are usually assigned to his birth, his death, and the time of composition of his General Prologue?

2. What is meant by Anglo-Saxon, and in what respects does it differ from modern English? What is meant by Middle English, and what are the three principal dialects of it?

3. Distinguish clearly between strong and weak verbs in Middle English. To which class do *leyen*, *dwellen*, and *senden* belong? State Chaucer's practice with regard to the pronunciation of final *e*, as far as relates to the conjugation of strong and weak verbs.

4. Give the meaning of the following lines in modern English, clearly explaining any difficult words, constructions or allusions:

- (a) And he hadde been somtyme in chivachie.
- (b) A Cristofre on his brest of silver sheene.
- (c) A peire of bedes gauded al with grene.
- (d) This worthi man ful wel his wit bisette;
Ther wiste no wight that he was in dette;
So estatly was he of governaunce,
With his bargayns, and with his chevysaunce.
- (e) In sangwin and in pers he clad was al,
Lined with taffata and with sendal;
And yit he was but esy of dispence;
He kepte that he wan in pestilence.
- (f) His lord wel couthe he plese subtilly,
To yeve and lene him of his owne good,
And have a thank, and yet a cote, and hood.
In youthe he lerned had a good mester.

5. What was a Sompnour, and how does Chaucer describe him? State to which "pilgrim" each of the quotations in question 4 severally refers.

Discuss the subject of Chaucer's Canon's Yeoman's Tale.

6. Give the meaning of the following lines in modern English, with notes upon any difficulties:

- (a) Wo occupieth the fyn of our gladnesse.
- (b) Was with the leoum frete er he asterte.
- (c) But algates therbi was she vnderstonde.
- (d) His oversloppe nis nat worth a myte,
As in effect, to him, so mot I go!
- (e) That that is ouerdoon, it wol nat preue
Aryght, as clerkes seyn, it is a vice.
- (f) The foure spirites and the bodies seuene.
- (g) But wasten al that ye may rape and renne.

7. Explain the following words:—tretys, pricasour, parvys, rouncy, golyardeys, culpons, vernicle, latoun, cut, *sb*;—chaffar, herbergage, weyued, tohewe, foyson, meschance;—clote-leef, cucurbites, cered pokets, annueleer, croslet.

8. Give the etymologies of the following modern English words:—advance, apothecary, bead, borrow, counterfeit, message, for the nonce, porphyry, portrait, renegade, villain, wanton.

BACON: HISTORY OF HENRY VII.

9. Whence did Bacon draw his materials for the life of Henry VII? Mention any circumstances of which Bacon's account is incorrect. What is meant by the date 1485-6?

10. Briefly narrate the circumstances of the insurrection under Lambert Simnel. What led to the death of James III. of Scotland?

11. How does Bacon describe king Ferdinand's behaviour upon the conquest of Granada? How was the news of it received in England?

12. How does Bacon estimate the character of John Morton? What account does he give of Empson and Dudley?

13. Give a summary of Bacon's description of the character of Henry VII.

14. Explain the allusions in the following phrases:—in a kind of *mattacina* of human fortune, he turned a broach, that had worn a crown—the privilege of clergy—The lady Margaret, whom the king's friends called Juno—the name of the White Rose, which had been given to her husband's false title, was continued in common speech to her true beauty.

FRIDAY, *June 5*, 1885. 1—4.

SHAKESPEARE: HAMLET.

1. Discuss the quarto editions of Hamlet printed in 1603 and 1604. What traces have we of the story prior to 1603?

2. Paraphrase and explain the allusions in the following passages:

(a) Whiles, like a puffed and reckless libertine,
Himself the primrose path of dalliance treads,
And recks not his own rede.

Laer. O, fear me not.

(b) As hardy as the Nemean lion's nerve.

(c) And a most instant tetter bark'd about,
Most lazar-like, with vile and loathsome crust,
All my smooth body.

(d) Your bait of falsehood takes this carp of truth;
And thus do we of wisdom and of reach,
With windlasses and with assays of bias,
By indirections find directions out.

(e) For this effect defective comes by cause.

(f) There is, sir, an aery of children, little eyases, that cry out on the top of question and are most tyrannically clapped for't: these are now the fashion, and so berattle the common stages, that many wearing rapiers are afraid of goose-quills and dare scarce come thither.

(g) He would drown the stage with tears,
And cleave the general ear with horrid speech,
Make mad the guilty and appal the free,
Confound the ignorant, and amaze indeed
The very faculty of eyes and ears.

(h) The Mouse-trap. Marry, how? Tropically.

(i) Where be his quiddities now, his quillets, his cases, his tenures, and his tricks?

3. Explain the following phrases, and the allusions in them:—I am too much i'the the sun—I am pigeon-livered and lack gall—let her be round with him—the hobby-horse is forgot—a fellowship in a cry of players—the engineer Hoist with his own petar—he keeps them, like an ape, in the corner of his jaw—most delicate carriages, and of very liberal conceit—as a woodcock to mine own springe.

4. Explain the following words, as used by Shakespeare:—rouse, *sb.*, beteem, flushing, blazon, truepenny, paragon, tarre, handsaw, abridgement, caviare, rack, mobled, milch, bodkin, stithy, mallecho, chopine, posy, ventages, shent. Derive the words *wassail*, *hectic*, *imposthume*.

ENGLISH LITERATURE AND COMPOSITION.

5. Give some account of the tragedy of Gorboduc, the Mirror for Magistrates, Gammer Gurton's Needle, and Ralph Roister Doister.

6. Give some account of the Bishops' Bible and of the Authorised Version of 1611.

7. Enumerate some of Marlowe's plays. What is the subject of his History of Dr Faustus, and how does he treat it? Comment on the works of Massinger and Chapman.

8. "Spencer was no more than the modern poet of the remote past; Shakespeare was emphatically the poet of the present and the future." Expand and justify this criticism.

9. Discuss the value and influence of the writings of Francis Bacon.

10. Discuss (1) the mental condition of Hamlet; and (2) his treatment of Ophelia.

11. Write a short essay on the following sentence from Bacon:—"There is no trusting to the force of nature, nor to the bravery of words, except it be corroborate by custom."

SATURDAY, June 6, 1885. 9—12.

FRENCH COMPOSITION, TRANSLATION AND GRAMMAR.

1. TRANSLATE into FRENCH :

During these operations Montmorency found himself exposed to greater danger from his own troops than from the enemy, and that their inconsiderate valour went near to have precipitated the kingdom into those calamities which he with such industry and caution had endeavoured to avoid. Unaccustomed to behold an enemy ravaging their country almost without control, impatient of such long inaction unacquainted with the slow and remote but certain effects of Montmorency's system of defence, the French wished for a battle with no less ardour than the Imperialists. They considered the conduct of their general as a disgrace to their country. His caution they imputed to timidity, his circumspection to want of spirit and the constancy with which he pursued his plan to obstinacy or pride. These reflections whispered at first among the soldiers and subalterns were adopted by degrees by officers of higher rank, and as many of them envied Montmorency's favour with the king and more were dissatisfied with his harsh disgusting manner, the discontent soon became great in his camp which was filled with general murmurings and almost open complaints against his measures.

ROBERTSON'S *Charles V.*, Bk. VI.

2. Translate into ENGLISH :

- (a) Mon père, soixante ans au travail appliqué,
 En mourant me laissa, pour rouler et pour vivre,
 Un revenu léger, et son exemple à suivre.
 Mais bientôt amoureux d'un plus noble métier,
 Fils, frère, oncle, cousin, beau-frère de greffier
 Pouvant charger mon bras d'une utile liasse,
 J'allai loin du palais errer sur le Parnasse.
 La famille en pâlit, et vit en frémissant
 Dans la poudre du greffe un poète naissant :
 On vit avec horreur une muse effrénée
 Dormir chez un greffier la grasse matinée.
 Dès lors à la richesse il fallut renoncer,
 Ne pouvant l'acquérir j'appris à m'en passer ;
 Et surtout, redoutant la basse servitude,
 La libre vérité fut toute mon étude.
 Dans ce métier funeste à qui veut s'enrichir,
 Qui l'eût cru que pour moi le sort dût se fléchir ?
 Mais du plus grand des rois la bonté sans limite
 Toujours prête à courir au-devant du mérite,
 Crut voir dans ma franchise un mérite inconnu,
 Et d'abord de ses dons enfla mon revenu.

BOILEAU, *Épître v.*

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(b) Pourquoi ne l'avoir pas gardée? Elle était faite à moi; j'étais fait à elle. Elle moulait tous les plis de mon corps, sans le gêner; j'étais pittoresque et beau. L'autre, raide, empesée, me mannequine. Il n'y avait aucun besoin auquel sa complaisance ne se prêtât; car l'indulgence est presque toujours officieuse. Un livre était-il couvert de poussière, un de ses pans s'offrait à l'essuyer. L'encre épaisse refusait-elle de couler de ma plume, elle présentait le flanc. On y voyait tracés en longues raies noires les fréquents services qu'elle m'avait rendus. Ces longues raies annonçaient le littérateur, l'écrivain, l'homme qui travaille. A présent, j'ai l'air d'un riche fainéant: on ne sait qui je suis.

Sous son abri, je ne redoutais ni la maladresse d'un valet, ni la mienne, ni les éclats du feu, ni la chute de l'eau. J'étais le maître absolu de ma vieille robe de chambre, je suis devenu l'esclave de la nouvelle.

Le dragon qui surveillait la toison d'or ne fut pas plus inquiet que moi. Le souci m'enveloppe.

Je ne pleure pas, je ne soupire pas; mais à chaque instant je dis: Maudit soit celui qui inventa l'art de donner du prix à l'étoffe commune en la teignant en écarlate! Maudit soit le précieux vêtement que je révère! Où est mon ancien, mon humble, mon commode lambeau de calemande?

DIDEROT, *Regrets sur ma vieille robe de chambre*.

3. When are proper names in French used in the singular and when in the plural form after the plural article?

4. Give the present and past participle and the first (or third) person singular of the simple tenses in use of *falloir, jeter, naître, nuire, plaire, valoir, seoir*, and write out in full the present indicative of the verb *haïr*.

5. How is *ce* used before the various persons of the present tense of the verb *être*?

6. Explain and illustrate by examples the usage of *quelque* before verbs, and *quelque...que* modifying (1) a substantive, and (2) an adjective or adverb.

7. Analyse and give the meaning of the following sentences:

i. Il m'a défendu d'en parler à qui que ce fût.

ii. Quoi que ce soit qu'il fasse on se défie de lui.

8. What is indicated by the use of the subjunctive after the relative pronouns? Quote or frame instances in illustration.

9. When would you employ the particle *ne* after *que* in a dependent sentence?

SATURDAY, June 6, 1885. 1—4.

MOLIÈRE: LE TARTUFFE. LANFREY: HISTOIRE DE NAPOLEON I^{er}. cc. 1—7.

QUESTIONS ON FRENCH LITERATURE 1600—1700.

1. TRANSLATE, giving *marginal* explanations where necessary:

- (a) M^{ME} PERNELLE. Ces visites, ces bals, ces conversations
Sont du malin esprit toutes inventions.
Là jamais on n'entend de pieuses paroles;
Ce sont propos oisifs, chansons, et fariboles:
Bien souvent le prochain en a sa bonne part,
Et l'on y sait médire et du tiers et du quart.
Enfin les gens sensés ont leurs têtes troublées
De la confusion de telles assemblées:
Mille caquets divers s'y font en moins de rien;
Et comme l'autre jour un docteur dit fort bien,
C'est véritablement la tour de Babylone,
Car chacun y babille, et tout du long de l'aune;
Et, pour conter l'histoire où ce point l'engagea...
- (montrant Cléante) Voilà-t-il pas monsieur qui ricane déjà!
Allez chercher vos fous qui vous donnent à rire
Et sans.... Adieu ma bru; je ne veux plus rien dire.
Sachez que pour céans j'en rabats de moitié,
Et qu'il fera beau temps quand j'y mettrai le pied.
- (donnant un soufflet à Flipote) Allons, vous, vous revez et bayez aux corneilles.
Jour de Dieu! je saurai vous frotter les oreilles
Marchons, gaupe, marchons.
- (b) DORINE. Mais quoi!...
- ORGON. Taisez-vous, vous. Parlez à votre écot.
Je vous défends, tout net, d'oser dire un seul mot.
- CLÉANTE. Si par quelque conseil vous souffrez qu'on réponde...
- ORGON. Mon frère, vos conseils sont les meilleurs du monde:
Ils sont bien raisonnés et j'en fais un grand cas:
Mais vous trouverez bon que je n'en use pas.
- ELMIRE (à son mari). A voir ce que je vois, je ne sais plus que dire;
Et votre aveuglement fait que je vous admire.
C'est être bien coiffé, bien prévenu de lui,
Que de nous dementir sur le fait d'aujourd'hui!
- ORGON. Je suis votre valet, et crois les apparences.
Pour mon fripon de fils je sais vos complaisances;
Et vous avez eu peur de le désavouer
Du trait qu'à ce pauvre homme il a voulu jouer.
Vous étiez trop tranquille, enfin, pour être crue;
Et vous auriez paru d'autre manière émue.

(c) La version qui nous a été conservée par Las Cases, et qui est corrigée de la main de Bonaparte, diffère par quelques variantes assez importantes de celle qui a été transcrite par Montholon, et l'on y trouve les pensées qui l'auraient fait hésiter pendant une demi-heure à prendre en main la cause de la Convention: "Était-il sage de se déclarer? La victoire même aura quelque chose d'odieux, tandis que la défaite voue à l'exécration des races futures. Comment se dévouer ainsi à être le bouc émissaire de tant de crimes auxquels on fut étranger? pourquoi s'exposer bénévolement à aller grossir en peu d'heures le nombre des noms qu'on ne prononce qu'avec horreur. D'un autre côté, si la Convention succombe, que deviennent les grandes vérités de notre Révolution? Nos nombreuses victoires, notre sang si souvent versé, ne sont plus que des actions honteuses. L'étranger, que nous avons tant vaincu, triomphe et nous accable de son mépris; une race incapable, un entourage insolent et dénaturé reparaissent triomphants, nous reprochent nos crimes, exercent leur vengeance et nous gouvernent en ilotes par la main de l'étranger. Ainsi la défaite de la Convention ceindrait le front de l'étranger et scellerait la honte et l'esclavage de la patrie."

2. Translate, explaining allusions, points of grammatical construction, &c.:

- (a) Aussi ne vois-je rien qui soit plus odieux
Que le dehors plâtré d'un zèle spécieux,
Que ces francs charlatans, que ces dévots de place,
De qui la sacrilège et trompeuse grimace
Abuse impunément et se joue à leur gré
De ce qu'ont les mortels de plus saint et sacré.
- (b) Et vous menez sous chape un train que je hais fort.
- (c) J'ai douté fort longtemps que ce fût tout de bon.
- (d) Ah! voilà justement de mes religieuses.
- (e) Tartuffe.... N'est pas un homme, non, qui se mouche du pied
Et ce n'est pas peu d'heur que d'être sa moitié.
- (f) Un cœur qui nous oublie engage notre gloire.
- (g) L'évaluation des dépouilles opimes — les finances obérées — faire
main basse — il fut passé par les armes.
- (h) Pavie marquée autrefois par un de nos désastres.
- (i) Il est des temps où la faiblesse est un crime irrémissible.

3. What success attended the early representations of *Tartuffe*, and how was it received by various classes of society?

4. Write a short account of Molière's poetical career, enumerating in chronological order his principal comedies.

5. State the reasons attributed to Napoleon by Lanfrey for falsifying the date of his birth.

6. Give the main features of the campaign which was terminated by the preliminaries of Léoben. What conduct of Napoleon (according to Lanfrey) necessitated this arrangement?

7. Sketch concisely the life and writings of any *two* of the following French writers: Descartes, Pascal, La Fontaine, La Rochefoucauld, Boileau, Bossuet.

8. What is meant by La Fronde? What are the best known writings of Scarron?

SATURDAY, June 6, 1885. 9—12.

1. TRANSLATE into ENGLISH :

- (a) Klein ist unter den Fürsten Germaniens freilich der meine;
 Kurz und schmal ist sein Land, mässig nur was er vermag.
 Aber so wende nach innen, so wende nach aussen die Kräfte
 Jeder; da wär's ein Fest, Deutscher mit Deutschen zu sein.
 Doch was priesest du Ihn, den Thaten und Werke verkünden?
 Und bestochen erschien deine Verehrung vielleicht;
 Denn mir hat er gegeben, was Grosse selten gewähren,
 Neigung, Musse, Vertraun, Felder und Garten und Haus.
 Niemand braucht' ich zu danken als Ihm, und Manches bedurft' ich,
 Der ich mich auf den Erwerb schlecht, als ein Dichter, verstand.
 Hat mich Europa gelobt, was hat mir Europa gegeben?
 Nichts! Ich habe, wie schwer! meine Gedichte bezahlt.
 Deutschland ahmte mich nach, und Frankreich mochte mich lesen.
 England! freundlich empfindest du den zerrütteten Gast.
 Doch was fördert es mich, dass auch sogar der Chinese
 Malet, mit ängstlicher Hand, Werthern und Lotten auf Glas?
 Niemals frug ein Kaiser nach mir, es hat sich kein König
 Um mich bekümmert, und Er war mir August und Mäcen.

GOETHE.

(b) Damals kam ein später oft wiederholter Wahlspruch auf, den man unter Stein's Porträt zu setzen pflegte: Des Guten Grundstein, des Bösen Eckstein, der Deutschen Edelstein. Wundervoll war es, wie sich auf die Stimme eines solchen Führers das Volk innerlich aufrichtete und dem lastenden fremden Drucke eine unbesiegbare Festigkeit entgegensetzte, wie ein völliger Umschwung nicht bloss in der äussern Ordnung des Staats, sondern auch in der innern Stimmung des Volkes eintrat. Wir erinnern uns, wie ein reiches Geistesleben seit den letzten dreissig Jahren in Deutschland emporgeblüht war: es genügt hier die Namen Schiller und Goethe, Kant und Schelling, Savigny und Wolf zu nennen. Auf all' diesen geistigen Gebieten fühlte man sich den damaligen Franzosen entgegengesetzt, auf allen trotz Napoleon's militärischer Grösse ihnen überlegen. So hielt man an dem tröstenden Gedanken, dass eine innerlich lebendige Nationalität in sich selbst die Kraft des Wachstums habe und nicht von aussen her zertreten werden könne.

VON SYBEL.

2. Give general rules for the declension of German nouns. Give the meaning, gender, genitive singular and nominative plural of

Wand, Pfand, Gewand, Schade, Friede, Gesang, Gefahr.

3. Distinguish between *der Erbe* and *das Erbe*, *die Kunde* and *der Kunde*, *die Steuer* and *das Steuer*; also between *Wörter* and *Worte*, *Länder* and *Lande*, *Bänke* and *Banken*.

4. Give the imperfect and past participle of *anstossen*, *durchhauen*, *auswerfen*, *vollbringen*, *unternehmen*, *verbrennen*; and write out the present indicative active of *empfehlen*, *ablassen*.

5. What is the force of the prefixes *be*, *ent*, *er*, *zer*, *bei*, *wider*, *um*, in the formation of verbs? State the difference of meaning of the verbs *umgehen*, *übersetzen*, *unterschreiben*, according as the prefix is separable or inseparable.

6. Translate into GERMAN:

The highest mountain in Europe is Mont Blanc in Savoy.

He went to Italy in May through France and Switzerland.

I will have my book printed in Germany.

There is no greater sorrow than to remember lost happiness.

Having finished his work he went out for a walk.

I have never been able to see him though I have gone several times to his house.

Never put off till tomorrow what can be done today.

Let him say what he will, he will never convince me that he was right.

He whose conscience is clear alone knows what true freedom is.

If I had known who he was I should have spoken to him.

I heard her sing some old German songs. Those are the songs I like best.

7. Translate into GERMAN:

Then another of the King's Thanes arose and said "Truly the life of a man in this world, compared with that life whereof we wot not, is on this wise. It is as when thou, O King, art sitting at supper with thine Aldermen and thy Thanes in the time of winter, when the hearth is lighted in the midst and the hall is warm, but without the rains and the snow are falling and the winds are howling; then cometh a sparrow and fieth through the house; she cometh in by one door and goeth out by another. Whiles she is in the house, she feeleth not the storm of winter, but yet when a little moment of rest is passed she fieth again into the storm, and passeth away from our eyes. So is it with the life of man; it is but for a moment; what goeth afore it and what cometh after it, wot we not at all. Wherefore if these strangers can tell us aught, that we may know whence man cometh, and whither he goeth, let us hearken to them and follow their law." So he spake, and the more part of the King's Thanes and wise men said that he had well spoken.

SATURDAY, June 6, 1885. 1—4.

SCHILLER, DIE JUNGFRAU VON ORLEANS.

1. TRANSLATE into ENGLISH:

- (a) Kommt an die Arbeit! Kommt! Und denke jeder
Nur an das Nächste! Lassen wir die Grossen,
Der Erde Fürsten um die Erde loosen;
Wir können ruhig die Zerstörung schauen,
Denn sturmfest steht der Boden, den wir bauen.
Die Flamme brenne unsre Dörfer nieder,
Die Saat zerstampfe ihrer Rosse Tritt,
Der neue Lenz bringt neue Saaten mit,
Und schnell erstehn die leichten Hütten wieder!
- (b) Wer rief euch in das fremde Land, den blühnden Fleiss
Der Felder zu verwüsten, von dem heim'schen Herd
Uns zu verjagen und des Krieges Feuerbrand
Zu werfen in der Städte friedlich Heiligthum?
Ihr träumtet schon in eures Herzens eitelm Wahn,
Den freigebornen Franken in der Knechtschaft Schmach
Zu stürzen und dies grosse Land, gleichwie ein Boot,
An euer stolzes Meerschiff zu befestigen!
Ihr Thoren! Frankreichs königliches Wappen hängt
Am Throne Gottes. Eher riss't ihr einen Stern
Vom Himmelswagen, als ein Dorf aus diesem Reich,
Dem unzertrennlich ewig einigen!

In what metre is this passage written?

- (c) Der Himmel schlage durch ein Wunder sich
Ins Mittel und erleuchte dies Geheimniss,
Das unser sterblich Auge nicht durchdringt —
Doch, wie sich's auch entwirren mag und lösen,
Eins von den Beiden haben wir verschuldet!
Wir haben uns mit höll'schen Zauberwaffen
Vertheidigt oder eine Heilige verbannt!
Und beides ruft des Himmels Zorn und Strafen
Herab auf dieses unglücksel'ge Land!

2. Explain the following words and phrases:

fürbass — *hergeworden* — *Kirchensprengel* — *Schildknappe* — *den Stapel halten* — *sie laufen Sturm* — *Lanzenknechte*.

3. What do you conceive to be the motive of this drama? In what respects has Schiller deviated from historical accuracy, and with what object?

4. Discuss briefly the characters of Thibaut, Talbot, Isabeau, Burgund.

RIEHL, CULTURGESCHICHTLICHE NOVELLEN.

5. Translate into ENGLISH :

(a) Nun geschah es, dass die Wetzlarer Bürger am Aschermittwoch einen altherkömmlichen seltsamen Aufzug begingen. Sie zogen nämlich gewaffnet in die geistlichen Höfe, vom Hofe der Deutschherren bis zum Altenberger Nonnenhof, um bei den Deutschherren ein lebendes weisses Huhn, bei den Nonnen einen Schinken, beim Dechanten einen Goldgulden zu empfangen als Zeichen der Stadt-Gerechtsame in den geistlichen Höfen. Als Hauptstück glänzte dabei aber allezeit das lebende weisse Huhn, wesshalb man den Aschermittwoch in Wetzlar noch bei Menschengedenken den "Hinkelchestag" nannte.

(b) Nach vollführtem Fang bewirthete uns der Ritter auf der Mühle, und als er nach manchem tiefen Trunk etwas stark redselig wieder zu Pferde stieg, blickte er nach dem Mond und sagte zu mir, der ich das Ross am Zügel hielt: "Wachsend Licht und Ostwind — das gute Wetter wird Stand halten. Sonnenschein auf Lichtmess! Der Dachs wird seinen Schatten sehen, wenn er aus der Höhle tritt. Bäuerlein! Wie heisst der Spruch vom Dachs auf Lichtmess?" Da erwiderte ich: "Sieht der Dachs auf Lichtmess seinen Schatten, so kriecht er auf vier Wochen wieder in den Bau zurück." Der Ritter lachte und rief zu seinen Leuten, indem er dem Pferd die Sporen gab: "Heuer wird der Dachs den Spruch zu Schanden machen!"

(c) Guillemain stand fest in seiner Schwärmerei, denn er war langsam und nothwendig hinein gewachsen. Es gibt keine geschiedeneren Leute als den Spötter und den Schwärmer. Allein der Spötter hatte sich geschämt über einen thörichten Spott und im Aerger über sich selbst die Beschämung aus seiner Seele hinweg geärgert und dann im Weltärger den eigenen Aerger erstickt; dem Aerger über alle Welt entspross aber die Begeisterung für die Weltreform, und da kleine Verdriesslichkeiten und Opfer zu einem wirklichen Dulderlose sich gesteigert hatten, so brach aus der Begeisterung endlich die Schwärmerei hervor.

6. Explain the following words and phrases :

auf zwei Achseln tragen—es verfieng alles nicht—Zunftgenossen—Leimsieder—Söldnerbauer—Schnittwaaren—Frakturbuchstaben—Kurfürst—Jakobiner—auf Spitz und Knopf stehen—Flegeljahre—selbänder.

7. Give the derivation of *Hoffahrt*, *Spezerei*, *Statthalter*, *Durchlaucht*.

Distinguish between the meanings of *Reue*, *Busse*, *Sühne*.

8. Mention the principal services rendered to German literature by *Klopstock* and *Lessing* respectively.

9. Give an account of the life and works of Schiller, and point out some of the chief points of contrast between him and Goethe.

SPECIAL EXAMINATION IN NATURAL SCIENCES FOR THE ORDINARY B.A. DEGREE.

FRIDAY, *June* 5, 1885. 9—12.

BOTANY. I.

1. DESCRIBE the development of the cambium-ring in the stem of a dicotyledon.
What is the most important physiological character of cambium cells?
What is the shape of one of the cells?
 2. Describe the structure of an anther, and the development of the pollen.
 3. If colourless glass is excluded, what coloured glass would you choose for covering a green-house? By what experiments would you justify your choice?
 4. What is meant by *conjugation*? How does it resemble and differ from ordinary sexual reproduction?
Describe in detail a case of conjugation from among the Algæ and the Fungi.
 5. Arrange the following orders in natural groups or alliances, so as to represent the affinities of the orders.

Papaveraceæ.	Tiliaceæ.
Rubiaceæ.	Berberideæ.
Malvaceæ.	Cruciferae.
Ranunculaceæ.	Caprifoliaceæ.
Linææ.	Fumariaceæ.
Dipsacææ.	Geraniaceæ.
Rutaceæ.	Valerianææ.
 6. Describe the structure and development of vessels, and state where they are found.
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FRIDAY, June 5, 1885. 9—12.

CHEMISTRY. I.

1. WHAT do you understand by temperature?

Account for the following phenomena:

(1) A current of steam at 100° is passed into a strong solution of sodium nitrate and the temperature of the solution rises in consequence to 121°C .

(2) Crystals of ammonium nitrate are dissolved in water and a deposit of moisture is found upon the outside of the vessel.

2. What observations would you make in order accurately to express the volume of a quantity of gas collected over water? Explain how you would employ the results of the observations in your calculation.

3. Give an account of the variation of the boiling point of a liquid with variation of the pressure upon its surface.

How would you determine the boiling point of a sample of sulphuric ether?

4. Describe any apparatus in which a liquid is distilled without boiling, and explain its action.

5. What do you understand by combustion?

Describe any method of determining the heat of combustion of a quantity of hydrogen and oxygen.

6. Define specific heat.

To what extent does a measurement of the specific heat of a solid element help in determining its atomic weight?

Mention any elements whose specific heats vary considerably with variation of temperature.

7. State the difference of behaviour of plates of rocksalt, alum and glass, with respect to the transmission of radiant energy. Describe how the energy radiated from a black body varies as its temperature is continuously raised.

FRIDAY, *June 5*, 1885. 9—12.

GEOLOGY. I.

1. STATE the different conditions under which the aqueous vapour in the atmosphere may be condensed. Describe the action of rain as an agent of denudation.
2. Distinguish between an escarpment and a sea-cliff. Describe some well known escarpment and explain its formation.
3. What circumstances determine the distribution of globigerine ooze over the sea bottom? State the arguments for and against the supposition that globigerine ooze is the modern representative of chalk.
4. What is meant by (a) a stratigraphical break, (b) a palæontological break? Give instances.
5. Give the sequence of Jurassic deposits (a) in Gloucestershire and (b) in Yorkshire. Mention any special features which may be observed in following the outcrops of these deposits from one locality to the other.
6. Give the sequence of Eocene deposits in the London Basin. Prove that the chalk must have been undergoing denudation in the early part of the Eocene period.
7. Describe the more important glacial deposits found (a) in mountainous districts, (b) in lowlands.

FRIDAY, *June 5*, 1885. 9—12.

ZOOLOGY. I.

1. DESCRIBE the structure of Actinia.
What are the chief structural differences in which Actinia differs from Hydra?
2. Mention the most important structural features presented by the Echinodermata.
Illustrate your answer by reference to Asterias.
Draw and describe a transverse section through the arm of Asterias.
3. Describe the anatomy of Ascidia.
To what animals are the Tunicata in your opinion most nearly related? Give the reasons for your view.
4. State the characters of the group Amphibia.
On what grounds has it been proposed to place the Amphibia and Pisces together in one division—Ichthyopsida?
5. What is meant by the term "discontinuous distribution"? Give two instances of it. How do you account for it?
6. Describe, with diagrams, the heart and arterial system of the frog.
Explain the arrangements in the Frog's heart which insure a supply of arterial blood to the head and of venous to the lungs.

FRIDAY, June 5, 1885. 1—4.

BOTANY. II.

7. WHAT do you understand by "reservoirs of reserve materials"? Give examples, and describe the structure and materials found in them.

8. Give a short account of the essential reproductive organs of *Fucus*, and of the process of reproduction.

9. Give an account of the development of the ovule of a phanerogam, describing the origin of the embryo-sac and its contents.

10. What different arrangements of the sexes occur in flowering plants? Let your answer include explanations of the terms: *hermaphrodite*, *diclinous*, *diœcious*, *gynodiœcious*, *dichogamous*, *cleistogamic*, *heterostyled*.

11. What is the general principle, underlying the "natural classification" of plants, which makes it a truly natural mode of classifying plants?

Mention one or two instances of genera which are placed together in one of the Linnean classes, but which belong to separate natural orders. Examples occur in the *Diandria-monogynia*, *Triandria-monogynia*, *Tetrandria-monogynia*, and in the *Octandria*.

12. Describe the growing point of the root of a Fern. Compare and contrast it with the growing point of the root of a Phanerogam.

FRIDAY, June 5, 1885. 1—4.

CHEMISTRY. II.

1. TIN and oxygen form two compounds in which the elements are combined in the following proportions,

(1) oxygen : tin = 8 : 59. (2) oxygen : tin = 8 : 29.5.

Reasoning on these data, how many grams of chlorine would you expect to find combine with 14.75 grams of tin? Give an account of the reasoning on which your answer is based.

2. A sample of air was analysed by explosion with hydrogen; from the following data determine its composition.

Volume of air = 20 c.c. at 475 mm. and 14° C.

Volume of air + hydrogen before explosion = 24 c.c. at 608 mm. and 14° C.

Volume of gas after explosion = 16 c.c. at 532 mm. and 14° C.

What precautions are necessary in performing the analysis of air by this method?

3. Give as full an account as you can of the preparation and properties of the compounds of hydrogen with (i) chlorine, (ii) bromine, (iii) iodine. Shew how the properties of these compounds illustrate the meaning of the term *monobasic acid*.

4. By what experiments can it be proved (i) that marsh gas is a compound of carbon and hydrogen, (ii) that 16 grams of this gas are composed of 12 grams of carbon and 4 grams of hydrogen?

By what reactions can cyanogen be prepared from its elements?

5. Describe the chemical changes which occur when each of the following compounds is heated: (i) $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$, (ii) $\text{H}_2\text{C}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$. Indicate the principal points of similarity and difference between the two operations.

6. How would you obtain all the nitrogen in one kilogram of potassium nitrate in the form of ammonia? How much sulphuric acid would this ammonia neutralise?

(K = 39.1, N = 14, O = 16, S = 32.)

7. What facts are summarised in each of the following statements:

(i) the equivalent of magnesium is 12,

(ii) the masses of the alkaline bases expressed by the formulæ $\text{Ca}(\text{OH})_2$, 2NaOH , 2KOH are equivalent?

8. How may the following pairs of oxides be obtained from one another:

(i) carbon monoxide and carbon dioxide,

(ii) sulphur dioxide and sulphur trioxide,

(iii) hydrogen monoxide and hydrogen dioxide,

(iv) chromic oxide and chromium trioxide?

9. Give three instances selected from the carbon compounds of the use of *compound radicles*, and explain the meaning of this term.

FRIDAY, June 5, 1885. 1—4.

GEOLOGY. II.

1. STATE what you know as to the following minerals, and mention any characters by which you would recognise them either in the hand specimen or under the microscope:—olivine, hornblende, apatite, ilmenite, tourmaline, anorthite.
 2. Mention localities in Britain where granite may be observed. State what you know as to the age of the several granite intrusions and the effects produced on the surrounding rocks.
 3. Discuss the bearing of Geology on problems relating to the water-supply of large towns. Illustrate your answer as far as possible by reference to special cases.
 4. What is a reversed fault? Illustrate the connexion between overthrown folds and reversed faults. Give instances.
 5. Describe the mode of formation of a coral reef. Name and describe the deposits in the geological series which are either old coral reefs, or derived from coral reefs.
 6. State what you know as to the age and mode of formation of the following deposits:
 - (a) Northamptonshire iron ore.
 - (b) Cleveland iron ore.
 - (c) Rock salt of Cheshire.
 - (d) Gypsum of Leicestershire.
 7. Describe fully the specimens marked A, B, &c.
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FRIDAY, June 5, 1885. 1—4.

ZOOLOGY. II.

1. DESCRIBE and compare with one another the respiratory organs and the mode in which respiration is effected in *Astacus*, *Anodon*, *Blatta*, *Perca* and *Mus*.
 2. Describe the skull and visceral arches of any Teleostean fish. Briefly compare the arrangements you describe with that found in the Frog.
 3. Enumerate the structural and other features in which the Mammalia differ from all other animals.
 4. Describe the pectoral and pelvic girdles and skeleton of the anterior limb of *Columba*. Point out in what respects they differ from the same structures in *Rana* and *Lepus*.
 5. Describe briefly the development of the alimentary canal and its appendages in the embryo chick.
 6. Name, giving your reasons, I, II, III.
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SATURDAY, June 6, 1885. 9—12.

BOTANY. III.

1. DESCRIBE the plants *A* and *B* in technical language.
 2. Name and describe the microscopic specimens given to you.
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SATURDAY, June 6, 1885. 9½—12½.

PRACTICAL CHEMISTRY.

[Write out a clear account of every experiment performed, and of the conclusions deduced from the results.]

1. OF what acid is *A* a solution? Make experiments to shew the presence of each of the elements of which it is composed; and prove, in as many ways as you can, that *A* is a solution of an acid.

2. Prove conclusively that the solution *B* contains a base. What base is present?

3. Each of the solids *C* and *D* is a salt. Find the qualitative composition of both.

From *C* prepare a specimen of *D*; and from *D* prepare a specimen of *C*.

SATURDAY, *June 6*, 1885. 9—12.

GEOLOGY. III.

1. STATE the evidence bearing upon the question as to the condition of the interior of the earth.
 2. Describe the formation of volcanic cones, giving instances of different kinds of cone, and state how the former existence of a volcano may be inferred when the cone itself has been denuded away.
 3. State what you know as to the distribution, lithological characters, fossil contents, and mode of formation of the Old Red Sandstone rocks of Great Britain.
 4. Enumerate the more important limestone deposits of the British Isles. Give the characters of the organisms whose remains are most abundant in each deposit.
 5. Give a short account of the Cretaceous beds that occur in the neighbourhood of Cambridge.
 6. To what geological horizon would you refer the following?
 - i. A clay full of various species of Ammonites, Baculites, Hamites and other genera of Cephalopoda.
 - ii. A phosphate nodule bed containing teeth of Carcharodon and earbones of whales.
 - iii. A ferruginous sandstone containing sponges and Rhynchonella depressa.
 - iv. A Limestone composed largely of fragments of the stems and other parts of Crinoids.
 7. Name four of the specimens 1—6, giving the characters by which you identify each.
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SATURDAY, *June 6*, 1885. 9—12.

ZOOLOGY. III.

1. DESCRIBE and compare with one another the digestive apparatus and the mode in which digestion is effected in Hydra, Lumbricus and Mus.
 2. Trace the development of the central nervous system of the chick to the end of the third day of incubation.
State what you know about the development of the spinal nerves.
 3. Describe the brain and cranial nerves of Mus and point out in what essential respects they differ from the same structures in Rana.
 4. Give a short account of the anatomy of Buccinum. Compare its nervous system, renal organs and heart with those of Anodon.
 5. Compare with one another, in structure and origin, the following: teeth, nails, hairs, feathers.
 6. Draw and describe *a*, *b*, *c*.
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SPECIAL EXAMINATION IN MECHANISM AND APPLIED SCIENCE FOR THE ORDINARY B.A. DEGREE.

FRIDAY, *June* 5, 1885. 9—12.

MECHANICS.

1. A MAN turns the handle of a machine 25 times a minute; the handle is 21 inches long, and he presses with an average force of 10 lbs.; how much work is he doing?

2. What do you understand by "centre of gravity"?

The driving wheel of a foot lathe is sometimes loaded so that its centre of gravity is not in its axis, what is the practical advantage of this arrangement?

3. A cannon weighs 35 tons, and the shot half a ton. The velocity of the shot on leaving the muzzle is 1200 ft. per second; find the velocity of the recoil of the cannon. Neglect the inertia of the gases formed by the burning of the powder.

Will the effect of these gases be to reduce or to increase the recoil? Give your reasons.

4. A man does 4000 ft.-lbs. per minute, and he starts a fly-wheel from rest; at what rate will it be moving after he has been working for three minutes? Take the weight of the fly-wheel as 20 tons, and suppose that the weight is all in the rim and at a distance of 10 ft. from the centre; neglect friction.

5. The weight of 100 lbs. is supported by a rope passing over a pulley in the ceiling of a room 15 ft. high, the other end of the rope is attached to a point on the floor 20 ft. away from the vertical through the weight.

Find by means of a diagram drawn to scale the direction and magnitude of the resultant force on the pulley.

6. Explain the method of supplying the tender of a locomotive with water whilst it is running.

At what speed must the train be moving to just lift the water into the tank, supposing that it is raised 6 ft.?

7. If the torsional moment of a shaft is 1000 ft.-lbs. when it is running at 110 revolutions per minute, how many horse-power is it transmitting?

Distinguish between the expressions "a moment of 10 ft.-lbs." and "10 ft.-lbs. of work."

8. When a steam engine runs quickly there is a considerable bending moment on the connecting rod, why is this?

9. Explain the hydraulic press.

There is much friction between the cup leather and the sides of the ram, shew that the friction is increased both by an increase of water pressure and also by an increase in the depth of the cup leather. If the cup leather were made more than 15 in. deep, shew that the ram would not move however great the pressure of the water; taking the diameter of the ram at 6 in., and the coefficient of friction as 0.1.

10. Give an example of power being transmitted to a distance by means of compressed air. What are the advantages and drawbacks of this method of transmitting power?

11. Explain any form of turbine.

12. What would happen if the gases formed when iron is run into a mould could not get out? What are these gases?

FRIDAY, June 5, 1885. 1—4.

HEAT.

1. A STEAM pipe (formed of 20-foot lengths of iron pipe) is arranged to convey steam at 300° F. Find how much play must be allowed for at each joint if the coefficient of expansion of iron be .0000062 per degree Fahrenheit and if the temperature of the pipe when not delivering steam be 60° F.

2. What is meant by the latent heat of steam?

Instead of a fire it is wished to use steam from a high pressure boiler for heating the water of a hot-water warming apparatus. Explain how the steam should be employed and draw a design of the apparatus you would suggest.

3. Describe and explain a calorimetric method of measuring the temperature of a furnace.

In the Siemens form of the instrument a copper cylinder is employed which gradually wastes away with use. Will the temperature reading become too high or too low in consequence? Give reasons for your answer.

4. Distinguish between radiation and convection of heat. Compare the advantages of an open fire-place and hot water pipes in respect of (1) ventilation, (2) warming.

5. What do you consider the most advantageous position for a ventilator in a large room? Give reasons for your answer.

6. What is meant by (1) the mechanical equivalent of heat, (2) the efficiency of an engine?

In obtaining work from an engine at the rate of 8 horse power, 1 cwt. of coals are consumed in three hours. Find the practical efficiency of the engine if 1 lb. of coal in burning produces 8000 lbs. Fahr. units of heat and the mechanical equivalent of 1 lb. Fahr. unit is 772 foot-lbs.

7. Describe the fire-box of a locomotive.

How should the supply of air to an engine-fire be regulated? What practical reason is there against reducing the effect of too large a fire by opening the fire-box door?

8. Describe the jet-condenser and the surface-condenser.

Give an estimate of the temperatures at which steam is supplied to a high pressure and a low pressure engine respectively.

9. Describe any mechanism that you are acquainted with for employing the waste steam of an engine to heat the supply of water on its passage to the boiler.

10. Describe the slide valve of a cylinder and explain what is meant by lap and lead.

How would you reverse the direction of driving of an ordinary horizontal engine?

11. Make a sketch of an indicator diagram and explain its meaning.

Calculate the indicated horse-power of an engine from the following data:—

Area of diagram 2 sq. in.

Length of diagram 3.5 in.

Spring used in the indicator 100 lbs. to the inch.

Area of piston 50 sq. in.

Stroke of piston 20 in.

Number of revolutions of the engine 120 per minute.

12. Describe and explain the Bessemer steel process.

SATURDAY, *June 6*, 1885. 9—12.

THEORY OF STRUCTURES, STRENGTH OF MATERIALS AND PRINCIPLES
OF SURVEYING AND LEVELING.

1. WHAT is the meaning of the term "bond" in brickwork? What is its use?

No part of the walls of a building should rise more than two or three feet above the rest whilst it is being built; why is this?

2. Make a sketch of a lattice girder and shew what forces act on each of its parts.

Why is the lower flange of a cast iron girder made broader than the upper?

3. What is meant by the line of pressures of an arch? What is the line of pressures for an arch with a uniform load? How is it altered if a heavy mass be placed at one point of the arch?

4. Find graphically the shape of the chain of a suspension bridge supporting a roadway weighing two tons per foot by means of ten equidistant rods five feet apart, supposing that the tension of the chain at the lowest point is 100 tons.

5. What form of arch is best adapted to support hydrostatic pressure? Give reasons for your answer.

6. What are the practical difficulties of raising a large roof as a whole and how may they be overcome?

7. What is meant by the shearing strength of wrought iron?

What force will it take to punch a hole 1 in. in diameter in an iron plate $\frac{3}{8}$ in. thick if the shearing strength of iron be 20 tons per square inch?

8. Give the formula for calculating the strength of a beam having given its dimensions and the tensile and crushing strengths of the material.

A beam is 9 in. deep and 3 in. wide; compare the weights it will support when the 9 in. side is vertical and when the 3 in. side is vertical.

9. What pressure of steam will it take to burst the plates of a boiler; taking the diameter of the boiler as 5 ft., the thickness of the plates as 0.5 in. and the tensile strength of the plate as 20 tons per square inch?

10. Two shafts are sunk into the ground and it is required to connect them by a tunnel. How should you get the right direction so that the headings would meet accurately?

11. The three angles of a triangle are measured by a theodolite to be $39^{\circ} 21'$, $62^{\circ} 18'$ and $78^{\circ} 19'$ respectively. How would you test the accuracy of the readings and how would you correct for small errors?

SATURDAY, June 6, 1885. 9—12.

MECHANISM.

1. DESCRIBE the different methods of supporting the pendulum of a clock.
Describe the method of connecting the escapement and the pendulum by means of the crutch. Why are not the crutch and pendulum made in one piece?
 2. Describe one only of the following escapements:—
Cylinder escapement, as used in Geneva watches.
Lever escapement.
Chronometer escapement.
What is meant by a detached escapement, and which of the above are detached? What is the advantage of a detached escapement?
 3. How is it that you can move the hands of a clock without damaging the works?
 4. Explain the mechanism of the governor of the Otto gas engine.
 5. Explain the mechanism for equalising the pressure on the two pairs of driving wheels of a locomotive.
How could you modify the arrangement so as to make the ratio of the pressures on the two pairs 3 to 4?
 6. In most traction engines and in many tricycles there is an arrangement by means of which both wheels are always driven with an equal force even when they are turning with unequal velocities as when going round a corner; explain how this is done.
 7. Explain how to draw the shape of the teeth of wheels.
 8. In radial drilling machines the drill can be placed in any position. Explain the mechanism by means of which the drill is driven.
 9. Give three ways in common use by which hand drills are driven.
 10. Explain the mechanism by means of which the amount of movement of the bed of a planing machine is changed to suit work of various length.
 11. Make a sketch of any parallel motion by means of which a point is made to move in a straight or approximately straight line by means of link work.
 12. Describe the method of arrangement of change wheels in a screw cutting lathe.
How would you modify the arrangement so as to cut a left-handed screw?
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MONDAY, June 8, 1885. 9—1 and 2—6.

1. SHARPEN a trying plane iron, and set it to take a fine shaving of hard wood.
 2. Plane up and fix together by a dovetail mortice two pieces of wood like the example given.
 3. Turn up a pattern in pine like the example given.
 4. Cut off, centre, turn up, and file a piece of wrought iron like the example given.
 5. Make a small drill about the size of example given.
 6. Temper a turning tool.
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FIRST EXAMINATION FOR M.B. DEGREE.

THURSDAY, *June 4*, 1885. 2—5.

ELEMENTARY BIOLOGY.

1. In what does the sexual reproduction of plants consist? Show that there is a general resemblance, among all plants, in the matter of sexual reproduction. Illustrate your answer by an example from:—(a) the simpler Cryptogams: (b) the higher Cryptogams: (c) Phanerogams.

2. Describe the structure of a mature plant of *Chara*, and explain its mode of growth. You may omit *details* about the reproductive organs.

3. Draw and describe briefly transverse sections through the bodies of *Vorticella*, *Hydra* and *Lumbricus*.

Point out the essential features in which the several sections resemble or differ from one another.

4. Describe and compare with one another the respiratory organs and the mode in which respiration is effected in *Astacus*, *Anodon*, and *Scyllium*.

5. Describe the urinogenital organs and their ducts of the Rabbit.

Briefly compare the arrangements you describe with that found in the Frog.

6. Describe the brain of *Scyllium*.

Mention the most striking differences between the central nervous system of the Vertebrata and Invertebrata.

SATURDAY, June 6, 1885. 1—4.

PRACTICAL ELEMENTARY BIOLOGY.

[Mount your Botanical preparations in dilute glycerine, and label them with your name.]

1. CUT a section of *C*, draw and describe it.

[You may answer question 2, or question 3, but not both.]

2. Give such a description of *A* as you can make without using a microscope. Illustrate your description by sketches.

3. Mount *B*, name, draw, and describe it.

4. Dissect out the glossopharyngeal and vagus nerves of *Scyllium* on one side.

[Leave a lettered drawing of your dissection for the inspection of the Examiners.]

5. Open the pericardium of *Anodon*; make a drawing of the heart in situ, and insert a bristle into the pericardial opening of the kidney on one side.

[Leave your drawing and preparation (under water) for the inspection of the Examiners.]

MONDAY, June 8, 1885. 9—12.

CHEMISTRY.

1. By what experiments can it be proved that ozone is an elementary body and not a compound of oxygen with some other element?
2. State and illustrate the principle of the conservation of matter (indestructibility of matter). Give an outline of the arguments employed to prove the truth of this principle.
3. You are given pure specimens of the following compounds (1) stannous and stannic oxides, (2) stannous and stannic sulphides, (3) sulphur dioxide and sulphur trioxide: describe shortly the experiments you would conduct with these compounds in order to prove the *law of multiple proportions*, and the *law of reciprocal proportions*.
4. What meaning do you attach to the statement 'ethylene dichloride may be regarded as an additive compound of ethylene, or as a substitution derivative of ethane'?
5. Give a short account of the preparation and reactions of the salts of (1) hypochlorous acid, (2) chloric acid. How would you prepare potassium chlorate from potassium hypochlorite?
6. Give one or two examples of double salts. Compare the action of acids on these with that of the same acids on each constituent of the salts.
Is potassium ferrocyanide a double salt? Give distinct reasons for your answer.
7. Amplify the statement 'glycerine is a trihydric alcohol.' Indicate the principal facts regarding (1) the composition, (2) the reactions of glycerine which are conveyed by this statement.
8. How could cane sugar be detected in presence of grape sugar?
By what physical or other methods can the quantity of cane sugar in a solution be determined? State, and very briefly explain, the physical facts on which the method you describe is founded.
9. Describe the chemical products obtained when wood is submitted to destructive distillation. How may each of these products be separated from the crude distillate?
10. In one experiment 98 grams of sulphuric acid were added to a dilute aqueous solution of barium chloride containing 208 grams of this salt: in another experiment 98 grams of the same acid were added to a dilute aqueous solution of zinc chloride containing 136.2 grams of the salt. What bodies, and how much of each, were produced in each case? Give in detail the reasons on which you base your answer.
(S = 32, O = 16, Ba = 137, Cl = 35.5, Zn = 65.2.)
11. Describe experiments to prove (1) that ammonium cyanate and urea have the same quantitative composition, (2) that these compounds have very different properties.
Sketch shortly the generally accepted explanation of the facts you have experimentally proved.

MONDAY, June 8. 1.30—4.

MECHANICS AND HYDROSTATICS.

1. DEFINE acceleration. A body moves in a straight line with a uniform acceleration of 3·2 feet per second; find the time necessary to increase its velocity by a velocity of 15 miles per hour.

2. State your reasons for accepting Newton's second law of motion.

Shew that, if the force on a body be taken to be numerically expressed by the product of the numbers expressing its mass and acceleration respectively, the unit of force is dependent on the units of mass, length and time. Indicate the unit of force thus defined when the gramme, centimetre and second are the units of mass, length and time respectively.

3. Distinguish between kinetic and potential energy and explain how energy is measured.

Point out the transformations of energy that take place during the swinging of a pendulum. State at what point of its swing a pendulum must be if its energy is half potential and half kinetic.

4. State the conditions under which three forces acting at a point are in equilibrium.

Shew that three forces of 5, 6 and 12 lbs. can never be in equilibrium.

5. Define centre of gravity.

A circular table weighing 20 lbs. is supported by vertical legs attached to four points of the rim forming a square; find from what parts of the rim a hundred-weight can be hung without overturning the table.

6. What is meant by the density of a substance?

Shew that the volume of a body can be calculated from its weight in air and its weight in water, if the density of water be known.

7. Explain how the densities of water and mercury can be compared by means of a U tube. Is it necessary that the two limbs of the U should be of the same diameter? Give reasons for your answer.

8. Account for the ascent of a balloon.

How would the lifting power of the balloon be altered if the atmospheric pressure diminished?

9. Describe a mercury barometer and fully explain how a measure of the atmospheric pressure is obtained by it.

TUESDAY, June 9. 9—12.

HEAT, ELECTRICITY AND OPTICS.

1. Give a formula to find the position of the image formed by a lens of a luminous point situated at a given distance from the lens and on its axis.

A pair of spectacles is made of two similar lenses, each having two convex surfaces of ten and twenty inches radius respectively and a refractive index 1.5. A person seeing through them finds that the nearest point to which he can focus is one foot away from the glasses. What is his nearest point of distinct vision without spectacles?

2. Explain carefully (illustrating your answer by means of a drawing) how you would prove that white light is a mixture of light of various colours, and that the constituents of the light can be recombined to produce the sensation of white light.

3. Convert the following readings of a thermometer graduated according to the Fahrenheit scale into degrees of the Centigrade scale: 86° , 0° , -22° ; also the following readings of a Centigrade thermometer into degrees of the Fahrenheit scale: 100° , -10° , -30° . What is the temperature at which the reading of a Fahrenheit thermometer is a number twice as large as that observed simultaneously on a Centigrade thermometer?

4. What data are required to calculate the temperature of a mixture of two liquids, which before mixing were at different temperatures?

Three liquids *A*, *B*, *C* are given. Four grammes of *A* at 60° , and one gramme of *C* at 50° , have, after mixing, a temperature of 55° . A mixture of one gramme of *A* at 60° and one gramme of *B* at 50° , shew a temperature of 55° . What would be the temperature of a mixture of one gramme of *B* at 60° and one gramme of *C* at 50° ? Would the result be different according as the thermometer readings given are those of the Fahrenheit or the Centigrade scale?

5. A body is taken into a room of uniform temperature lower than that of the body and is placed on a table. Explain the different causes which will make the body lose heat and shew how you would proceed if you wanted to prevent, as far as possible, the loss of heat due to one of these causes.

6. What is meant by "the mechanical equivalent of heat"? Explain in detail some method of finding its value.

7. State the laws of electrostatic induction.

An electrified sphere is suspended by a silk fibre and an insulated conductor is gradually approached. When the conductor is far away, it is found that the sphere is repelled; when it is near, the sphere is attracted; what do you conclude from this? Illustrate your answer by a drawing.

8. State the experimental facts which render it possible to use electrolytic decomposition as a measure of electric currents. Two electrolytic cells, the resistance of which is very high compared with all other resistances in the circuit, are placed, first in series, and secondly in multiple arc; compare the total quantities of salt decomposed in the two cases.

9. Define "Line of Force" and shew how the lines of magnetic force can be used to determine the currents induced in closed wires moving in a magnetic field.

A magnet is placed inside a coil with its axis parallel to the axis of the coil. It is then quickly drawn out of the coil. Will the direction of the current in the coil depend on the direction in which the magnet is drawn out of it? Give reasons for your answer.

10. Describe the action of the electrophorus.

Would you expect the electrophorus to work better when the cake of pitch or resin is placed on a conducting plate, or when it is in contact with non-conductors only?

TUESDAY, June 9, 1885. 1½—4½ P.M.

PRACTICAL CHEMISTRY.

[Write out a clear account of every experiment performed, and state distinctly the conclusions deduced from each result.]

1. THE solution *A* contains a certain acid. Find the quantity of this acid in 1 litre of *A*, (i) by direct determination by means of the given standardised potash solution, (ii) by observing the specific gravity of *A* by means of a hydrometer.

Express your result in grams per litre and also in percentages.

2. What is *B*? From it prepare pure specimens of each of the two oxides of the metal contained in *B*.

3. The alloy *C* contains two metals: what are these metals? From *C* prepare a pure specimen of each metal.

WEDNESDAY, June 10, 1885. 9—12.

PRACTICAL CHEMISTRY.

[Write out a clear account of every experiment performed, and state distinctly the conclusions deduced from each result.]

1. THE solution *A* contains a certain alkali. Find the quantity of this alkali in 1 litre of *A*, (i) by direct determination by means of the given standardised acid solution, (ii) by observing the specific gravity of *A* by means of a hydrometer.

Express your result in grams per litre, and also in percentages.

2. Find the metals in *B* and *C* (one is a hydroxide, the other a carbonate). From these salts prepare a double sulphate containing the metals of *B* and *C*.

3. What are *D* and *E*? Test each for the presence of the impurities commonly found in commercial specimens.

SECOND EXAMINATION FOR M.B. DEGREE.

TUESDAY, *June* 9, 1885. 9—12.

PHYSIOLOGY.

1. DESCRIBE the structure of a urinary tubule in the various parts of its course. Give an account of the chief causes which influence the flow of blood through the kidney.
 2. Describe the behaviour of the left ventricle during a cardiac cycle and the immediate effects of its action. Give the evidence on which the statements you make are based.
 3. Compare the structure of a lymphatic gland with that of the spleen. What are the causes of the flow of lymph?
 4. Describe the structure of a pulmonary alveolus and explain fully the interchange which there takes place between the blood and the pulmonary air.
 5. Describe the minute structure of the retina in the yellow spot. Give a brief account of what is known regarding the connection between the retina and the brain.
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TUESDAY, June 9, 1885. 2 P.M.

1. GIVE a general outline of the mode of preparation of the different kinds of extracts. What conditions are essential to the preservation of these substances?

2. What is the composition of ammoniated mercury? How is it prepared? What is its popular name?

3. On treating a specimen of Hydrargyrum cum Cretâ with diluted hydrochloric acid, filtering from the insoluble portion, and adding chloride of tin to the filtrate a precipitate is formed. What impurity is probably present in the specimen and what confirmatory test would you employ?

4. What is the pharmacopœial name of tartar emetic? What officinal preparation is there for internal use, and what quantity of the ingredient does it contain?

5. Whence are Creasote and Carbolic acid obtained? What characters according to the pharmacopœia have they in common, and how do they differ from each other?

6. Describe fully the pharmacopœial method of preparing Acidum Hydrocyanicum Dilutum.

"270 grains rendered alkaline by the addition of solution of soda require 1000 grain measures of the volumetric solution of nitrate of silver" (i.e. 17 grains of AgNO_3) "to be added before a permanent precipitate begins to form which corresponds to two per cent. of the real acid." Write down the chemical changes which take place here and shew how the percentage is arrived at.

H = 1. C = 12. N = 14. O = 16. Ag = 108.

7. Describe what takes place in each step of the process when dilute hydrocyanic acid is added to a minute quantity of a mixed solution of sulphate and persulphate of iron, afterwards treated with potash and finally acidulated with hydrochloric acid.

8. What are the popular names of

Unguentum Hydrargyri Nitratis,
Tinctura Camphoræ Composita,
Linimentum Ammoniz,
Plumbi Acetas?

9. What are the pharmacopœial preparations containing (i) atropia, (ii) strychnia, (iii) morphia? Give the amount in each preparation.

WEDNESDAY, *June 10*, 1885. 9 A.M. to 12 M.

ANATOMY.

1. DESCRIBE the dissection necessary to exhibit the entire course of the Thoracic Duct, giving its relations and tributaries throughout its course.
 2. Describe the peculiarities of structure, and the vascular and nervous supply of the mucous membrane lining the nasal fossæ and the accessory cavities which communicate therewith.
 3. Give an account of the parts in order which cover the sterno-cleido-mastoid muscle and describe in order from below upwards all those structures which lie under this muscle.
 4. Describe the structures which constitute the wall of the true pelvis as seen from the inside, and illustrate by means of diagrams the relations and positions of the vessels and nerves in the wall.
 5. Describe the ankle joint, its ligaments, bony surfaces, the relative positions of the tendons which lie in contact with it, and the shape and extension of the synovial cavity.
 6. Describe the dissection necessary to shew the teres minor and its nerve of supply.
-

June 13, 1885. 9—2.

PHYSIOLOGY. PRACTICAL WORK.

1. Mount, staining if necessary, one of each of the specimens (a) (b) (c). Make a rough sketch of each specimen, naming the several parts of it.
 2. Put up a specimen to shew sympathetic nerve-cells from a frog.
 3. What substances of physiological importance are contained in the fluid (A)?
-

THIRD EXAMINATION FOR M.B. DEGREE.

PART I.

TUESDAY, *May 12.* 9 A.M. to 12 M.

PRINCIPLES OF SURGERY.

1. DESCRIBE and distinguish between (a) Ulceration, (b) Sloughing, and (c) Phagedæna.
 2. Describe the pathological changes induced in the urinary organs by habitual over-distension of the bladder.
 3. Explain the terms Varix, Varicose aneurysm and Cirroid aneurysm.
 4. Describe the local and general changes which may follow an extensive burn or scald of the surface.
 5. Why does inflammation of a long bone usually cause necrosis?
Explain the subsequent reparative process, and mention the obstacles which may retard or prevent recovery.
 6. Describe the symptoms and pathological changes in a case in which bony ankylosis is produced by the wound of a large joint.
-

TUESDAY, *May 12.* 2 to 4.30 P.M.

MIDWIFERY.

1. GIVE fully the diagnostic indications of pregnancy, the woman having arrived at the end of the fifth month of that state.
 2. Describe the sources of danger to the child, when, in a breech case, the head alone remains unborn, and give an account of the proceeding proper for its rescue.
 3. How would you proceed to determine whether or not, in a case of pelvic deformity, premature labour should be induced—and when it should be induced? What observations would you make at the time of delivery with a view to precision in future like proceedings?
 4. What is a parovarian cyst? Give its pathology, diagnosis and treatment.
-

THIRD EXAMINATION FOR M.B. DEGREE.

PART II.

WEDNESDAY, *May* 13, 1885. 9 A.M. to 12 M.

PATHOLOGY.

1. DESCRIBE the manner in which you would determine the presence of tubercle-bacilli (1) in phthisical sputum, (2) in a fragment of a phthisical lung. With what other bacilli may they be confounded?
 2. In what ways may diabetes mellitus prove fatal? What circumstances would lead you to give an unfavourable prognosis in a particular case?
 3. Give an account of round or simple ulcer of the stomach, and of its possible terminations. Does a like ulcer occur in any other part?
 4. Describe the morbid changes observable (1) in the lungs (including microscopic changes), (2) in the heart, (3) in the thorax itself, in a case of pulmonary emphysema.
 5. Describe the morbid changes following the complete occlusion by a calculus of (1) the pancreatic duct, (2) the cystic duct. What is the usual composition of pancreatic calculi?
 6. What internal pathological changes usually accompany the formation of chalk-stones in the fingers?
-

WEDNESDAY, *May* 13. 2 to 4.30 P.M.

ELEMENTS OF HYGIENE.

1. DRAW up directions for the feeding during the first year of a new-born infant who cannot be suckled.
 2. What precautions would you take to preserve your health if practising medicine during an outbreak of cholera in this country?
 3. What symptoms would lead you to suspect that a person was suffering from the presence of arsenic in his wall-paper? What tints in wall-paper are produced by arsenical pigments?
 4. What consequences injurious to health are apt to result from habitually breathing the impure air of ill-ventilated rooms that are either too small or over-crowded?
 5. In what circumstances is lemon-juice (or lime-juice) taken for the prevention of disease? What experiment in respect of its preventive power was tried in the last English Arctic Expedition, and with what result?
 6. Describe precisely the operation of vaccination, with the precautions necessary to secure its efficiency. State the objections that have been raised to compulsory vaccination, and answer them.
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THURSDAY, *May 14.* 9 A.M. to 12 M.

PRINCIPLES AND PRACTICE OF PHYSIC.

1. DESCRIBE the modes of onset of Empyema in the adult and the child respectively.

In the latter case what difficulties may arise in physical diagnosis and how may these be overcome?

2. What are the chief clinical forms of ulcerative endocarditis?

3. Describe the condition of the Liver known as "acute yellow atrophy," and give some of the more characteristic symptoms by which it may be recognised during life.

4. Describe a typical case of Enteric (Typhoid) Fever, giving a chart of the temperatures and directions for treatment. Indicate the ordinary dangers and occasional complications, and the modifications of treatment they may require.

5. What are the causes of anæmia? Discuss fully its treatment and state the anatomical appearances likely to be found when anæmia terminates fatally.

6. Write a full account of a case of Paralysis Agitans. With what diseases is it likely to be confounded?

THURSDAY, *May 14.* 2 to 4.30 P.M.

MEDICAL JURISPRUDENCE.

1. WHAT are the symptoms of poisoning (1) by toadstools, (2) by Calabar beans? Give the treatment appropriate to each case.

2. What diseases are most often simulated by malingerers? Compare these with the simulated affections of hysteria.

3. Describe the circumstances in which a blow is apt to be suddenly fatal, mentioning some conditions of the internal organs which would conduce to such a result.

4. The dead body of a man is found close to the fireplace of a bedroom, the face and neck being severely burned. How would you proceed to determine whether the burns had occurred during life or after death?

5. Write out with great care as to details a certificate of lunacy in the form provided (1) for a young unmarried woman suffering from acute mania, (2) for a man of 45 suffering from general paralysis of the insane.

MEDICAL CERTIFICATE.—SCHED. (A.) No. 2, Sects. 4, 5, 8, 10, 11, 12, 13.

(*) Here set forth the qualification entitling the person certifying to practise as a physician, surgeon, or apothecary, *ex.gra.*:—Fellow of the Royal College of Physicians in London, Licentiate of the Apothecaries' Company, or as the case may be. I, the undersigned, being a (*) and being in actual practice as a (*) hereby certify, that I, on the Day of at (*) Physician, surgeon, or apothecary, as the case may be. (*) Here insert the street and number of the house (if any), or other like particulars. in the County of separately from any other Medical Practitioner personally examined (*) Insert residence and profession, or occupation (if any) of the patient. of (*) and that the said (*) Lunatic, or an idiot, or a person of unsound mind. is a (*) and a proper person to be taken charge of and detained under Care and Treatment, and that I have formed this opinion upon the following grounds; viz. :—

(*) Here state the facts. 1. Facts indicating Insanity observed by myself (*)

(*) Here state the information, and from whom. 2. Other facts (if any) indicating Insanity communicated to me by others (*)

Signed, Name, _____

Place of Abode, _____

Dated this Day of One Thousand Eight Hundred and Eighty

SATURDAY, *May* 16. 2.30 P.M.

PATHOLOGICAL SPECIMENS.

NAME the microscopic specimens *A, B, C.*

Describe what you see, and make a rough sketch showing the chief features of the specimen.

MONDAY, *May* 18, 1885. 2.30 P.M.

PRESCRIPTIONS.

[The prescriptions are to be written without abbreviations, in form to be sent to a druggist.]

1. PRESCRIBE for the treatment of
 - (a) a case of chronic vesical catarrh, with full directions for administration;
 - (b) a case of acute gout, the first attack of the patient, who is a man of middle age and otherwise healthy.
2. Write a prescription for an effervescent mixture containing ammonia, for a child eight years old, with lobar pneumonia accompanied by great prostration.
3. Give the respective doses or ranges of doses for adults of the following drugs:

Tinctura Belladonnae,	Liq. Hydrargyri Perchloridi,
Extractum Nucis Vomicae,	Chloral Hydras,
Oleum Crotonis,	Hydrargyri Subchloridum.
Elaterium,	

NATURAL SCIENCES TRIPOS.

PART I.

MONDAY, *May* 25, 1885. 9—12.

1. (i) DEFINE: Potential, Equipotential Surface, Line of Force.

How does the Potential outside an electrified sphere vary with the distance from the centre of the sphere, and how could you prove this law experimentally?

(ii) Describe the phenomena of magnetic induction. What effect is produced upon a uniform magnetic field by the introduction of a mass of soft iron?

2. Explain what you understand by chemical combination and by chemical affinity. In what relations do solution and the formation of alloys stand to these?

Ammonia gas is absorbed by the following: (*a*) recently heated charcoal, (*b*) strong sulphuric acid, (*c*) water, (*d*) calcium chloride; are any or all of the actions which occur examples of chemical combination? Give distinct reasons for your answer.

3. (i) How is the streak of a mineral obtained?

What assistance is afforded by the streaks of the following minerals in distinguishing them from each other?

- (*a*) Argentite, Blende.
- (*b*) Crocoisite, Pyrargyrite, Cinnabar.
- (*c*) Haematite, Ilmenite, Limonite.
- (*d*) Copper Pyrites, Iron Pyrites, Mispickel.

(ii) Define axes of crystallographic symmetry. In what groups of crystals are they absent? What are the axes of symmetry in $\{hkl\}$ of the cubic system? Which of these are effective in $\kappa\{hkl\}$?

4. Describe the mode of formation of the different types of valleys, stating in each case the parts played by the various agencies concerned in their production.

5. Describe a transverse section of the rhizome of a Fern (*Pteris*), cut in winter, and observed in chlor. zinc iodine (Schultze's solution).

6. The higher animals (Metazoa) are sometimes spoken of as "colonies of Protozoa." In what sense and to what extent is this justifiable?

Give a brief account of the modes of reproduction met with in Protozoa.

7. Give a morphological classification of the joints of the human body, describing one example of each order.

8. What is the chemical composition of the red blood corpuscles of man? Describe the changes they undergo in the body or under the influence of reagents, so far as these changes throw light on their structure. How do you explain the passage in certain circumstances of red corpuscles through the capillary wall?

MONDAY, May 25, 1885. 1—4.

9. (i) FIND the acceleration of a point moving with uniform velocity in a circle.

The mean distance of the earth from the sun is 93,000,000 miles, and the sun's radius is about 430,000 miles, find to two figures the gravitational acceleration at the surface of the sun.

- (ii) What is a standard atmosphere?

A vessel provided with an air-tight top, through which passes an open tube reaching three-quarters of the way to the bottom, is filled with water. This vessel is connected at the bottom with a second similar one, on the same level but open at the top. When will the water cease to flow between the two vessels and what will be the pressure of the air in the former at that time?

10. (i) You are required to prepare two compounds of lead and oxygen. Describe accurately how you would proceed (details of apparatus and processes of purification need not be given). State clearly why you would proceed thus. How would you determine that each body you prepare is a definite compound and not a mixture of two or more compounds?

(ii) The two chlorides of a certain metal contain respectively 55.9 and 65.5 per cent. of chlorine. The chloride of another metal contains 38.8 per cent. of chlorine. The specific heat of the first metal is .113 and that of the second .056. From these data deduce the equivalents and atomic weights of the metals, and the formulæ of the chlorides.

11. (i) Give the distinctive characters of the species Pyroxene and Amphibole.

How does Diabase differ from Augite and Actinolite from Hornblende?

What are the ordinary modes of occurrence of these minerals?

- (ii) What is the sphere of projection of a crystal, and how is it represented in giving maps of crystals?

Draw freehand a projection of the sphere of projection of a Rhombohedral crystal on the plane 111, and give roughly but consistently the positions of the poles of $\{2\bar{1}1\}$, $\{20\bar{1}\}$, $\{100\}$, $\{101\}$. Indicate the zones in which these poles lie.

12. Describe the general characters (a) of the rocks which form the central portions of important mountain ranges, and (b) of the folds and faults which occur on the flanks of such ranges.

13. If young potatoes are prevented from developing underground, by removing them as they arise, tuberous organs are formed on the plant aboveground: what is the significance of this (1) morphologically, (2) physiologically?

14. Describe, with figures, the anatomy of Amphioxus, laying special stress on the more important morphological features.

Point out, stating your reasons, in what respects Amphioxus is more primitive than the higher Vertebrates as regards either its anatomy or its development.

15. Describe the skeletal and muscular mechanism of grasping with the hand.

16. Describe the structure of a moderate-sized artery, such as the radial, and state the differences existing in smaller and in larger arteries. Point out the use of the several parts of an artery, and show how the well-being of the whole body is secured by the arteries being (a) elastic (b) contractile.

TUESDAY, *May* 26, 1885. 9—12.

17. (i) WHAT is the meaning of the expression "the length of the seconds' pendulum"? How far would it be rational to make that length or some sub-multiple of it the unit of length? What would be the acceleration of gravity if the length of the seconds' pendulum were the unit of length?

(ii) Describe the mode of transmission of a sound-wave in air.

The velocity of sound in any gas is numerically equal to the square root of the ratio of the numerical value of the elasticity of the gas for constant heat, and the density of the gas; the velocity may also be calculated from the formula

$v = \sqrt{\frac{p\gamma}{d}}$, where p is the pressure of the gas, d its density, and γ the ratio of its specific heats at constant pressure and constant volume. Reconcile these statements.

18. (i) The density of the vapour obtained by heating ammonium chloride is less than that calculated from the formula NH_4Cl . Why is this? Describe experiments in support of your answer. Mention three other bodies which, when heated, behave in a manner similar to ammonium chloride.

(ii) Give the formulæ of the oxides of carbon, and two modes of preparing each of them. Describe experiments by which their composition by weight and by volume may be determined.

19. (i) Arrange in order of hardness the following minerals:—Amethyst, Almandine (Garnet), Olivine, Opal, Spinel, Turquoise.

(ii) What are the common features of the minerals called Felspars?

Name six species included in this group, and give their crystallographic and chemical characters.

20. (i) Describe the general characters of pumice and volcanic ash. Describe also the phenomena accompanying the eruption of these materials. What conclusions may be drawn from the facts which you mention as to the condition of the molten magma immediately preceding an eruption?

(ii) Explain how fissures in the ground are formed in connection with earthquake shocks, and refer to instances in illustration of your answer.

21. In what does growth consist? Describe a simple mode of measuring the growth of an internode.

22. Describe and compare with one another the circulatory, respiratory, and nervous systems of Anodon and Helix.

Anodon and Helix are both members of the group Mollusca. Point out in what essential respects they resemble one another and differ from the other great groups of animals.

23. Give an account of the venous system of the abdominal and pelvic viscera.

24. State the evidence as to the existence and mode of action of a 'respiratory centre' in the medulla oblongata, pointing out the circumstances which mainly govern its activity. What evidence is there as to the existence of nervous mechanisms of respiration in the spinal cord?

TUESDAY, May 26, 1885. 1—4.

25. (i) DRAW a diagram shewing the alteration of volume produced in a mass of ice or water by the continuous addition of heat.

There is a second temperature at which a glass vessel holds as much water as it does at 4° C. Explain this fact and describe how you would proceed to find the temperature in question if you were provided with a set of tables of physical constants.

(ii) Find the relation between the difference of temperature and the difference of pressure on the two sides of a very narrow orifice through which a liquid is being slowly forced.

Would you expect greater rise of temperature with water or with mercury?

26. (i) What chemical changes occur when an electric current is passed between platinum electrodes through the following liquids: (a) acidulated water, (b) a concentrated solution of hydrochloric acid, (c) an aqueous solution of sodium sulphate, (d) an aqueous solution of iodic acid?

(ii) Describe three instances of chemical reactions taking place between two or more distinct bodies wherein the products differ according to the temperature at which the action occurs.

27. (i) Define the optic axes of a crystal. Distinguish between positive and negative crystals. How are crystals classified with regard to their optical properties?

(ii) How would you distinguish between fragments of the following minerals?

- (a) Aragonite and Calcite.
- (b) Graphite and Molybdenite.
- (c) Mimetite and Pyromorphite.
- (d) Garnet and Idocrase.

28. Give an account of the various chemical and physical processes by which the consolidation of clastic rocks is effected.

29. What is a rudimentary organ? Give an example from among the Cryptogams, and one from among the Phanerogams.

30. Give a short account of the development of the renal organs of Scyllium.

Institute a short comparison between the renal organs of the Vertebrata and those of Lumbricus. Mention any animals in which this type of renal organ is not found.

31. Describe the origin, course and distribution of the spinal accessory nerve.

32. Describe the structure of a ganglion on the posterior root of a spinal nerve. What evidence is there as to the function of such a ganglion?

WEDNESDAY, May 27, 1885. 9—12.

33. (i) WHAT is the magnifying power of a telescope?

Assuming the magnifying power of a telescope to be proportional to the ratio of the breadth of the incident to that of the emergent beam, prove that a planet can never appear brighter when looked at with a telescope than when looked at with the naked eye.

(ii) When are two pencils of light said to interfere, and why is it incorrect to speak of the interference of two "rays" of light?

Two equally thick plates of glass, which singly do not shew any interference bands, are placed nearly parallel to each other at a distance of several inches. A parallel beam of light passes through them. Explain the circumstances under which interference phenomena can be observed.

34. (i) What is generally understood by the terms oxidation and reduction?

Give formulæ expressing reactions in which each of the following bodies acts (a) as an oxidising, and (b) as a reducing agent;

nitrous acid; arsenious oxide; ozone.

(ii) Why should the following oxides be placed in the same class: N_2O_5 , CrO_3 , SO_3 , SiO_2 ? Are there any reasons which would induce you to place these oxides in different classes?

35. (i) How many faces are there on a cubic crystal exhibiting the forms {012}, {112}, $\kappa\pi$ {124}? Give the symbols of all the faces of the last form. Which of these faces will lie in the zone [012, 112]?

(ii) A mineral is found to contain Ca 39.68, P 18.45, O 38.09, F 3.77. Calculate its formula.

Ca : P : O : F = 40 : 31 : 16 : 19.

36. (i) Describe the Devonian rocks of the South-west of England and correlate them with their Irish equivalents.

(ii) Compare the carboniferous series of the South with that of the North of England.

37. Describe the structure and development of the sporangium and spores of a Fern.

38. Compare, using the embryological knowledge you possess, the arterial system of a bird with that of a fish.

What is the primitive function of the skeletal rods in the walls of the anterior part of the alimentary canal of a fish? Which of these skeletal structures are retained in the amniotic Vertebrata? Why are they retained and the others lost?

39. What are the different methods of arrangement of fibres found in the muscles of the human body, and how does the mode of grouping of the fibres affect the action of the muscle?

40. Give an account of the nature and condition of the contents of the duodenum, when an ordinary meal is being digested, and describe the changes which these contents undergo as they travel down the small intestine, stating briefly by what agencies the changes are brought about.

WEDNESDAY, May 27, 1885. 1—4.

41. (i) EXPLAIN the principles of Duplex Telegraphy.

At the two end stations of a line worked by the Wheatstone's bridge method of Duplex Telegraphy, the keys are pressed down simultaneously. Assuming that the two batteries are of equal strength and that the whole arrangement of one station is symmetrical with that at the other, find the distribution of currents in the different parts of the circuit.

(ii) State fully what is meant by an ampère.

Explain how an electric current is expressed in ampères when a tangent galvanometer is employed.

42. (i) Explain the bleaching action of chlorine. How is the explanation confirmed by a comparison of the relative bleaching power of equal volumes of hypochlorous anhydride and chlorine?

(ii) Why are the formulæ of the salts obtained by the action of ammonia on acids written as containing the radicle ammonium? What attempts have been made to isolate this radicle and with what results?

43. (i) What assistance is afforded by pleochroism in limiting the system to which a crystal belongs?

What are the pleochroic characters of Andalusite, Iolite (Cordierite) and Sapphire?

(ii) Give the chemical composition, crystallographic symmetry and cleavage of each of the following minerals:—Apophyllite, Barytes, Blende, Corundum, Epidote, Mica.

44. (i) Mention the exposures of Jurassic rocks within easy distance of Cambridge, and give a brief description of each such deposit, referring it to its probable position in the series.

(ii) Give a short sketch of the distribution in time of the several subdivisions of the Cephalopoda.

45. Describe the structure of a typical papilionaceous flower, fruit and seed. What orders are allied to the Leguminosæ, and what forms of flower besides the papilionaceous one exist in the order?

46. What do you know of the minute structure of the nervous and muscular systems of the Cœlenterata?

What view may be deduced from these facts as to the origin of these tissues in the higher animals? How far is this view borne out by embryological evidence?

47. Describe the arrangement and mode of development of the layers of peritoneum which form the omental bag (lesser sac of the peritoneum).

48. Describe the structure of the gustatory organs. Which nerves are nerves of taste; how are they distributed? State the relations of the different parts of the tongue to different kinds of taste.

THURSDAY, May 28, 1885. $\begin{cases} 10-1. \\ 1-4. \end{cases}$

PRACTICAL PHYSICS.

Candidates may select one question from each of the Sections A, B, and C.

Questions from Section D may be substituted for not more than two of those from A, B, and C.

Tables of constants, logarithms &c. may be used to facilitate calculation.

The answers must include details of the observations and the precautions for accuracy.

A.

1. MEASURE the pitch of the given micrometer screw.
2. Determine the number of cubic inches in a litre.
3. Find the sensitiveness of the given level.
4. Test the accuracy of the given gas meter.
5. Shew that the couple required to produce torsion in the given wire is proportional to the angle of torsion.
6. Determine from observations of the note produced by the siren and the rate of rotation of its disc, the number of holes in its circumference.

B.

7. From observations with the given thermometer deduce its rate of cooling for a difference of 1°C . between it and its enclosure.
8. Determine the volume of air expelled from the given glass bulb when its temperature is raised to 100°C . and thence deduce the coefficient of expansion of air at constant pressure.
9. Determine the fusing point of the given alloy and find its specific gravity in the liquid state.
10. Determine the angle between the two given plane mirrors which are both approximately vertical.
11. Adjust the given lenses so that they form a telescopic system and find its magnifying power.

12. Assuming that the index of refraction for the given prism is connected with the wave length of the refracted light by the formula $n = a + \frac{b}{\lambda^2}$, find the value of b .

13. Compare the intensities of the light reflected from the two given plates when the angle of incidence is 30° for each.

C.

14. Compare the reduction factors of the two mirror galvanometers.

15. Assuming the resistance-box to be correct at the temperature of 15°C ., find the conductivity of copper and express it in absolute measure.

16. Magnetise a needle so that its magnetic moment shall be as nearly as you can make it 10 c.g.s. units, the Earth's horizontal intensity being assumed to be 0.18 c.g.s. unit.

17. Determine whether the deflexion of the given quadrant electrometer is proportional to the electromotive force between the quadrants, and whether the needle is positively or negatively electrified.

18. By means of a condenser and a high resistance galvanometer compare the electromotive forces of the given battery cells.

D.

19. Find the cubical contents of the given vessel.

20. Determine as accurately as you can the mass of the given body.

21. Read as accurately as you can the barometer, and reduce the reading to the sea-level and 0°C .

22. Find the acceleration of gravity by means of the pendulum.

23. Determine the amount of aqueous vapour in a cubic foot of air.

24. Find the latent heat of fusion of ice.

25. Find the focal length of the given lens for sodium light.

26. Determine the angle of incidence of sodium light on the given prism when the deviation is a minimum.

27. Find the electromotive force of the given thermo-electric couple when the junctions are at 0° and 100° respectively.

28. Determine the resistance of the given battery.

29. Find the absolute value of the current flowing through the given circular arc of wire [$H = 0.18$ c.g.s. units].

THURSDAY, May 28, 1885. 9—12.

PRACTICAL CHEMISTRY.

[Leave any specimens you prepare for the examiners duly labelled. Give a clear account of every experiment you perform, and of the conclusions you deduce from the results, noting each step of the reasoning you employ.]

1. THE solid A is glacial phosphoric acid. Prepare from it:

- | | |
|-------------------------------|---|
| (a) One sodium orthophosphate | } in the solid state, and each as pure as possible. |
| (b) One sodium pyrophosphate | |
| (c) One sodium metaphosphate | |

To which class of phosphoric acids does A belong?

2. What is B? Test it for the presence of its ordinary impurities.

3. The liquid C is an aqueous solution of hydrochloric acid and sodium chloride. Find the amount of (a) hydrochloric acid, (b) sodium chloride in 50 c.c. of this liquid.

(Standardised solutions of AgNO_3 and KOH are given.)

THURSDAY, May 28, 1885. 2—5 P.M.

PRACTICAL CHEMISTRY.

[Leave any specimens you prepare for the examiners duly labelled. Give a clear account of every experiment you perform, and of the conclusions you deduce from the results, noting each step of the reasoning you employ.]

1. THE solid A is a metallic oxide; of what metal is it an oxide?

Prepare from A two other oxides of the metal; one containing more oxygen, the other containing less oxygen than A does. Prepare also a solution of a salt containing the metal of A in the acid radicle.

2. Of what does B mainly consist? What impurities commonly found in commercial samples of the body B does the specimen given you actually contain?

3. The liquid C is an aqueous solution of a common acid; how many grams of the acid are contained in a litre of the given solution?

(Standardised KOH solution is provided.)

FRIDAY, *May* 29, 1885. 9—2.

1. STATE how you would proceed in order to show as clearly as possible (a) the structure of a Pacinian corpuscle, (b) the structure of a tactile corpuscle of the skin.

2. Mount one section from each of the glasses (a), (b), (c), (d), treating the sections in the manner that seems to you best adapted to show their structure. State what you do. Make rough sketches of your specimens to illustrate your description of them.

3. What substances of physiological importance are contained in A? State in detail your method of analysis.

(You need only test for proteids, ferments and the constituents of bile. Not more than fifty minutes can be allowed for the analysis.)

4. Demonstrate on a nerve-muscle preparation from a frog the formation of the curve of tetanus from a number of single muscular contractions, determining the minimum number of single contractions which produce tetanus.

Or,

Determine the latent period of contraction of the apex of the ventricle of a frog's heart.

5. Describe as accurately as you can with the aid of diagrams the method of determining the action current (negative variation) of a nerve.

SATURDAY, *May* 30, 1885. 9—12 AND 1—4.

HUMAN ANATOMY.

PRACTICAL AND ORAL EXAMINATION.

DISSECT the part placed before you and so dispose it upon the table as to show to the best advantage those structures asked for on your ticket.

Place numbers upon *all* the structures you expose and leave beside the part a written key to the numbers you place upon the preparation.

SATURDAY, May 30, 1885. 9—12.

N.B. *Mount your preparations in dilute glycerine.*

Label your preparations with your name.

A. MAKE preparations showing the structure of *A*. Draw and describe your preparations. *Not more than two glass-slides to be sent up.*

B. Describe the flowering plant *B* in technical language. Give its name and natural order.

C. Name the microscopic specimens (distinguished by arabic numerals *C*₁, *C*₂, *C*₃, &c.). Point out, *in the briefest possible manner*, the features by which you recognize each specimen.

SATURDAY, May 30, 1885. 1—4.

MINERALOGY. PRACTICAL WORK.

1. DETERMINE by the blowpipe the constituents of the substances *A* and *B*.

2. Measure the angles in the principal zones of one of the crystals *C*. Determine the system, assign indices and make a freehand stereographic projection of the poles.

3. Describe the characters, state the symmetry and cleavage (as far as they can be determined by inspection only) of the minerals conspicuous on the specimens marked I, I, III, &c.

Name if you can the minerals, and then state what their composition is.

4. Determine the directions of vibration of waves travelling with greatest and least velocity in the plates *D*, indicating your result by outlines on your paper across which the directions are marked.

5. Describe briefly the phenomena observed in the three sections *E*, *F*, *G*. Determine whether they belong to positive or negative crystals: and state to what systems they probably belong, giving your reasons for this conclusion.

6. What is the symmetry manifested by the models *H*, *K*? Assign indices to the principal faces, using the letters marked on the models.

MONDAY, *June* 1, 1885. 10—1.

GEOLOGY (PRACTICAL EXAMINATION).

I. *Questions for written answers.*

1. DESCRIBE accurately the genera 1—4. Give the name, zoological position and geological range of each.
2. Give a short account of each of the specimens 5—8.
3. Describe as fully as possible the specimens 9—16.

II. *Oral Examination.*

MONDAY, *June* 1, 1885. 2—5.

ZOOLOGY AND COMPARATIVE ANATOMY.

1. DISSECT out the generative and urinary organs of *A*

or

the cranial nerves of *B*.

Leave your dissection and a lettered drawing for the inspection of the examiners.

2. Make a lettered drawing of, and identify, *a*, *b*, *c*.
 3. Identify, giving reasons, I. II. III.
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NATURAL SCIENCES TRIPOS.

PART II.

THURSDAY, *June 4*, 1885. 9—12.

1. DESCRIBE any form of apparatus for exhibiting the optical combination of two simple harmonic vibrations in planes at right angles. Explain how the figures produced may be employed to determine the difference of phase of two tuning-forks which are sounding the same note.

How do you explain the fact that notes of the same pitch and quality may be represented by curves of different shape?

2. Describe the motion of a particle under the action of a force proportional to the displacement of the particle from its position of rest, its motion being retarded by a resistance proportional to its velocity, and explain how the motion of a galvanometer needle surrounded by a closed circuit may be inferred therefrom.

How is the logarithmic decrement of the needle affected by the resistance of the galvanometer circuit?

3. Describe Ampère's experiments on the action of electric currents on each other and state how far he was justified in drawing any conclusion as to the action of linear elements of currents on each other. What results obtained since Ampère's time have a bearing on this question?

Explain especially what conclusions you would draw from the following two experiments made respectively by Helmholtz and Schiller.

(a) A straight wire at right angles to the axis of a magnet and revolving about that axis will shew electrification at its ends while revolving.

(b) Two parallel circular plates forming an air condenser can revolve about an axis joining their centres and are connected together by means of contacts sliding against the axis through a galvanometer. The whole is placed in a non-uniform magnetic field, symmetrical about the axis of rotation of the condenser. On suddenly setting the condenser into rotation the galvanometer does not move.

4. Describe in some detail the properties of two classes of bodies which appear to be intermediate between chemical compounds and undoubted mixtures. Give a theoretical definition of chemical as distinguished from physical action. Indicate the difficulties which occur in applying the definition to actually occurring cases.

5. Give a general account of the properties of uranium and its compounds. Indicate the principal relations of these to other elements and their compounds, and discuss the position to be assigned to uranium in a scheme of classification of the elements.

6. What bodies may be obtained by the action on glycerine of each of the following compounds: (i) hydriodic acid, (ii) phosphorus iodide, (iii) oxalic acid? Trace the course of the reaction in each case, pointing out the conditions which chiefly affect the final result.

7. What are the endomorphs most commonly found in Chalybite, Quartz and Topaz?

What light do they respectively throw on the circumstances under which these minerals have been formed?

8. Give the chemical, physical and crystallographic characters of the following minerals:—Beauxite, Crocoisite, Cronstedtite, Millerite, Phenakite, Phillipsite, Proustite, Scorodite.

9. What are the principal results obtained by recent investigations of the variations of electric state of the surfaces of crystals whilst undergoing changes of temperature?

10. Write an account of the mineralogical composition, structure and mode of occurrence of each of the following rocks:—Ditroite, Minette, Gabbro, Picrite, Lherzolite, Greisen, Granulite and Eclogite. Discuss the various meanings which are or have been attached to the terms Diabase, Melaphyre and Porphyrite.

11. What is meant by the term foliation? Describe the different types of foliated structure. Discuss the question of the origin of foliation.

12. Give a sketch of the geological history of Great Britain so far as volcanic action is concerned, stating the nature, age and geographical distribution of the more important volcanic rocks.

13. Describe the development of the ovule of an Angiosperm up to the period at which it is ready for fertilisation; and shew what evidence it affords with regard to the "recapitulation theory."

14. Describe the changes that accompany the fall of leaves in autumn.

How would you shew by an experiment that the fall is not due to mere withering?

15. In what different modes of fertilisation does loose incoherent pollen play a part?

16. Give an account of the anatomy of any Turbellarian, pointing out the features which are characteristic of the group.

Discuss the more important views which have been held by zoologists as to the relations of the Turbellaria to other groups of animals.

17. Describe the chief varieties as to structure and mode of development presented by the skeletal system in Coelenterata. State and examine the chief objections that have been advanced against Darwin's Theory of Coral Reefs.

18. What is the relation of the living fauna of any region of distribution to the fauna of the more recent deposits? Illustrate your answer by reference to South America.

19. What are the principles of arrangement noticeable in the disposition of the cancelli in the articular ends of long bones? Illustrate these principles by particular descriptions of the structure of both ends of the femur, tibia, and humerus.

20. Describe that portion of the sympathetic system of nerves above the superior cervical ganglion.

21. Describe the structure in the orbit known as "the Capsule of Tenon." In what relation does its cavity stand to the lymph-spaces within the eyeball?

22. What is known about the origin, distribution and fate of glycogen?

23. Describe the structure of the macula lutea. State what is known concerning the function of the retinal epithelium. Give a brief sketch of what is known about visual purple.

24. Discuss the question of the function of the nerve cells which occur on the course of the cardiac nerves.

THURSDAY, *June 4*, 1885. 1—4.

25. STATE the laws of diffusion of gases and apply them to the case of a mixture of gases in equilibrium under the action of gravitational forces.

Would you expect to find oxygen and nitrogen existing in the same relative proportion in the outer parts of the earth's atmosphere as on its surface?

Two vessels are placed at different levels, one being filled with hydrogen and the other with nitrogen. Describe what will happen, if a connection is established between them. If there is a displacement of the centre of gravity of the system, account for the loss or gain of potential energy.

26. Explain the qualities of glass and workmanship necessary to make a prism valuable for spectroscopic purposes. Which faults of a prism are the most dangerous, and which can be easily corrected for by an adjustment of the lenses of the collimator and telescope?

Draw a distinction between the "resolving power" and "dispersion" of a prism in a given position. How do they vary with the position of the prism?

27. Shew that the principle that a state of equilibrium is a state of minimum potential energy together with the assumption that the energy per unit of volume is greater in the superficial layer of a liquid than in the interior, will account for the spherical form of water drops.

Describe the process of formation of drops in a water jet, and account for the forms assumed by the water during the formation of the drops.

28. Trace the development of the conception of affinity in chemistry from the time of Bergmann to the present day.

29. The composition of the only periodic acid which has been obtained in definite form is expressed by the formula H_5IO_6 . Give an outline of the arguments brought forward to prove the existence of several periodic acids. State the formulæ of the more important periodates, and shew by reactions the relations of each class to the normal periodates.

30. Accurately describe the reactions by which rosaniline may be prepared from its elements. What are the relations of this compound to (i) aurine, (ii) rosolic acid, (iii) leucaniline?

How is rosaniline prepared on the large scale?

31. Describe briefly the different kinds of pseudomorphs, and explain the general processes by which they have been produced.

What is the peculiarity of the Calcite crystals of Fontainebleau? State how you would classify them.

32. Describe carefully the hemihedral developments of a hexagonal crystal.

Point out the evidence thus afforded for the existence of the hexagonal as distinguished from the rhombohedral system.

33. Give some account of the investigations which have been made with regard to the nature of the alterations of form experienced by crystals on change of temperature.

Prove that the indices of any face of a crystal must be independent of the temperature.

34. Write an essay on contact metamorphism, describing as fully as possible the effects observed in particular cases.

35. Describe the nature, distribution and probable mode of origin of the different members of the European Trias. Explain the conditions under which chemical deposits of gypsum, rock-salt and the "Abraum" salts (Kieserite, Polyhallite, Carnallite, &c.) may have been produced.

36. State the characters of the Hippuritidæ and give an account of the distribution of the group in time and space.

37. Give the life history of *Œdogonium*, and discuss its morphological relationships to other plants.

38. Describe the development and structure of a pollen grain of an Angiosperm (*e.g.* Mallow), and explain how the sculpturing on the walls is produced.

39. Describe the method of plasmolysis, and point out what are the chief results due to this method.

What do you consider to be the chief substances which are osmotically active in the living plant?

40. State the essential characters of the Annelida, and discuss fully their relations to other groups of animals. What groups, if any, do you suppose to have sprung from Annelida, and on what grounds?

41. Describe the leading features in the anatomy and development of *Balanoglossus*, and discuss fully their morphological significance.

42. State and critically examine the views at present held with regard to the segmentation of the vertebrate head.

Discuss the question as to whether the cranial segments you describe are serially homologous with the body segments.

43. Discuss the morphological value of the following conditions of *Muscles*: (A) Multiple origins, (B) Tendinous intersections, and (C) Double nervous supply: give instances in each case wherein these conditions have originated in different ways.

44. Describe the optic thalamus, and illustrate by means of diagrams its relations to the other parts of the nervous system, both grey and white.

45. What do you know of the labours of the Anatomists after whom the following structures have been named? Torcular Herophili, Vena Galeni, Eustachian and Thebesian valves, Antrum of Highmore, Circle of Willis, Duct of Wharton, Foramen of Winslow, Steno's duct, Capsule of Glisson.

46. What are the principal forms of leucocytes found in man? Do they differ from the leucocytes of other animals? If so, in what respects? Discuss the question of the functions of leucocytes.

47. Describe the nature of the connection existing between the sympathetic and the cerebro-spinal nervous system. In what histological respects do sympathetic nerves differ from spinal nerves? What, if any, difference in function can be connected with the difference in structure?

48. What evidence is there as to the function of the cell-nucleus?

FRIDAY, June 5, 1885. 9—12.

49. EXPLAIN the effects of wind on the propagation of sound in the atmosphere, (a) as regards the rate of propagation, (b) as regards the intensity of sound at a given distance from the source.

AB and *CD* are two towers, *A* and *C* being their lowest points; the height of the towers is small compared to their distance, and there is no obstacle between them which can intercept sound. A bell sounded at *A* is heard better at *D* than at *C*. What conclusion do you draw from this? Would an electric bell, sounded at *D* be heard better at *A* or at *B*?

50. Give the reasons which have led to the conclusion that three fundamental colour sensations exist; and shew that the experiments made with mixtures of spectral colours cannot decide the question which are the three fundamental colours, though they prove that, assuming the three fundamental colour sensations to be approximately realised by looking at a pure spectrum, the primary colours cannot differ much from red, green and violet respectively.

51. Shew how the expression of temperatures on the absolute thermodynamic scale is related to Carnot's cycle. State carefully what would happen during each part of the cycle if the working substance were a liquid in presence of its vapour. What experimental data are necessary in that case to apply it practically to the numerical expression of absolute temperatures?

52. Discuss the meaning to be given to the quotient obtained by dividing the molecular weight of a compound by its specific gravity. Trace the argument based on a determination of the number thus obtained by which it has been sought to prove that the structural formula of phosphorus oxychloride is $\text{Cl}_2 = \text{P} - \text{O} - \text{Cl}$.

53. Classify the oxides and hydroxides of the metals of the iron group, indicating the principal reactions (i) of formation, (ii) of decomposition by acids and by heat of these compounds.

54. Several compounds exist each having the empirical formula $\text{C}_2\text{H}_3\text{NO}_2$. Describe and classify these compounds, and give the reactions which lead to the structural formula assigned to each.

55. Give an account of some of the more important minerals found near Vesuvius. Suggest a reason for the peculiar mineralogical character of this volcanic locality. Justify any conclusions you may draw from the results of laboratory experiments.

56. Develop the principal formulae necessary for the determination of an anorthic crystal, and check their accuracy by deducing the corresponding formulae in the rhombic system.

57. Describe briefly the processes by which copper is extracted from ores containing large quantities of Iron Pyrites.

58. Discuss the relations of joints, faults, mineral veins and lodes to one another. Give a detailed description of an important British Fault.

59. Give the principal lithological and palæontological characteristics of the different horizons of the Cambrian and Silurian rocks in (a) South Wales, (b) North Wales and (c) the South of Scotland.

60. Describe the geological structure and physical features of the Cañon District. How have these features been evolved? What is meant by "base level of erosion"?

61. What are the structural differences between the long- and the short-styled forms of dimorphic hetero-styled plants?

Discuss the nature of the sexual relation between the two forms.

62. State what you know of the development and metamorphoses of *plastids* (chromatophores, starch-formers, &c.) in plants.

63. Given the fact that an organ of a plant maintains itself in a horizontal position, describe fully the experiments which you would make to test the character of its horizontal growth.

64. Give a short account of the anatomy of Comatula.

In what important respects do the Crinoidea differ from other recent Echinoderms? Do you consider these differences to be primitive?

65. In what respects do you regard the following "larval forms" as ancestral?—Amphiblastula of Sponges, Pluteus of Echinida, Glochidium, Nauplius, tadpole of frog. What explanation can you give in each case of those characters which you do not consider ancestral?

66. State, and illustrate by examples, the chief characters of the pelagic and of the deep-sea fauna respectively. Which do you consider to be the more primitive, and why?

67. Describe in detail the skull of a foetus at the end of the ninth month.

68. What measurements do you regard as of importance in describing the race-characters of human skulls? Give in each case your reason for adopting the system of measurement you select.

69. Give three examples of muscles which act over two joints and contrast the mechanisms of the instances which you select.

70. Describe the minute structure of the cerebrum in the region of the 'motor area.' What do you understand by the term 'motor area'? Give a brief account of the course of the fibres which can be traced from the cortex of the cerebrum to other parts of the central nervous system.

71. What are the typical changes which take place in vertebrate glands during secretion? State briefly the variations which occur.

72. Describe the effects of a constant current upon a nerve and upon a muscle. How do you explain the differences in the two cases?

FRIDAY, June 5, 1885. 1—4.

73. WHAT is the "characteristic curve" of a dynamo machine? A series-dynamo, the characteristic curve of which is known, has been converted into one of compound winding by means of a wire of known length and resistance. Shew how to obtain without further measurements the characteristic curve of the dynamo in its altered state.

74. Describe Huyghens' construction for the refraction of light incident upon a surface of uniaxal crystal, and state how far the construction has been experimentally verified.

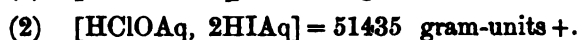
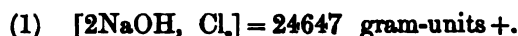
Describe and explain the effect of interposing a plate of quartz in the path of a parallel beam of plane polarised white light which is dispersed by a prism after passing through an analyser. How does the appearance vary with the thickness of the quartz?

Could any visible effect be produced without using an analyser?

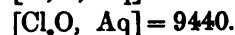
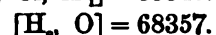
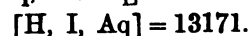
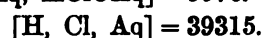
75. Give an account of experiments upon the variation of the specific heat of water with variation of temperature, and criticise the methods you describe with regard to the possible sources of error.

76. Describe accurately two typical cases of gaseous dissociation, one being a case of an elementary body. Give an explanation of dissociation both from the molecular and the thermodynamical point of view.

77. Calculate the heat of formation from its elements of hypochlorous anhydride from each of the following reactions:



The additional data required are the following:



78. Give two processes by which phenol may be prepared from benzene. How can phenol be transformed into (i) paroxybenzoic acid, (ii) salicylic acid? What is the relation of the last named compound to coumarin?

79. What difficulties are met in the determination of the chemical composition of Idocrase, Staurolite and Tourmaline?

To what types are they referred?

80. Describe four minerals found only in meteorites.

What light do they throw on the circumstances under which meteorites may have been formed?

81. Point out the progress in Mineralogy due to Professor W. H. Miller.

82. Give an account of the glacial and interglacial deposits of Great Britain. Compare the mammalian fauna preceding with that succeeding the glacial period.

83. Compare the rocks of the South of England which occur between the Jurassic and the Upper Greensand with the corresponding rocks of North Germany and the Jura.

84. State and discuss fully the various theories of oceanic circulation, referring to any recent investigations that throw light on the question.

85. What plants are grouped together to form the Lycopodinæ (Dichotomeæ)? Can you justify the arrangement in question?

86. Give an account of the excretory organs of plants, such as may serve as a basis of classification of these organs.

87. Discuss the advantages or disadvantages in the struggle for life entailed on plants by being (a) annuals, (b) perennials.

What change in the flora of a plot of ground may be expected to follow continuous heavy manuring?

88. Give a short account of the urinary organs (including their ducts) and their relations to the generative organs in the Ichthyopsida. Which of the arrangements you describe do you regard as the most primitive? State your views as to the arrangement in the hypothetical common ancestor.

89. State what you know of the sympathetic nervous system and suprarenal bodies of fishes. Compare the arrangements you describe with that found in any amniotic vertebrate. Give a short account of what is known as to the development of these organs.

90. Give an account of the various modes in which the nutrition of the embryo is effected among animals, and of the influence which they severally have on the course of development. What evidence have we as to the origin of the mammalian placenta?

91. What are the morphological relations of the different portions of the vertebral artery in man, and how can you account for the several varieties to which this vessel is liable?

92. Describe the alveolar arch of the upper jaw and the hard palate. Mention the varieties presented by them at different ages and their special modifications of form among men of different races.

93. Describe the attachments of the epiglottis, its minute structure, and the mechanism by which it is moved.

94. What is the normal chemical composition of urine? About how much of the chief constituents of urine is secreted daily by man? What are the chief causes which determine (a) an increase or decrease in the amount of urea excreted in 24 hours, (b) the occurrence of abnormal constituents such as sugar and albumin?

95. How would you classify the peripheral endings of the nerves of general sensation in vertebrates? Briefly describe the intermediate forms between the members of each class. What is known about the course and connections of the posterior roots of the spinal nerves?

SATURDAY, June 6, 1885. 9—12.

96. ACCOUNT for the formation of an optical image on the undulatory theory and extend your explanation so as to include the dispersion of colours produced by a prism.

97. State the laws of polarisation of the light scattered in the earth's atmosphere; and give an account of some of the experimental and theoretical investigations which have been made in order to discover the cause of the polarisation.

Discuss how far reflexion from haze and low-lying clouds can account for the fact that when the sun is near the horizon, the sky in its immediate neighbourhood is polarised, but that there are four points (never visible simultaneously) on the vertical circle through the sun's centre which shew no polarisation.

98. Define the dielectric strength of a non-conductor, and state under what circumstances a spark discharge takes place in air at the atmospheric pressure.

Two conducting plates *A* and *B* are placed parallel as in an air condenser and two rounded conductors *C* and *D* are placed in the space between them. Of these conductors one (*C*) is connected to earth and the other to an electric machine. The potential of *D*, at the moment a spark passes from it to *C*, is measured. Will that potential be different if *A* and *B* are connected to the ground, or if they are electrified?

99. Give a short account of the experiments made by Stas to prove the invariability of the ratios in which elements combine to form compounds.

Describe accurately the experiments by which Stas determined the atomic weight of nitrogen.

100. Briefly describe and contrast the two processes at present in use for manufacturing sodium carbonate from common salt.

Give an account of two or more processes for recovering sulphur from alkali-waste, clearly indicating the chemical reactions on which the processes are based, and discussing their applicability on a manufacturing scale.

101. Shew that the relation of pyridine to quinoline is very similar to that of benzene to naphthalene. Discuss the structural formulæ of pyridine and quinoline, stating the reactions by which each has been prepared synthetically. Illustrate the notation adopted for distinguishing derivatives of quinoline in which the substituting atom (or group) is in the pyridine ring from those in which the substituting atom is in the benzene ring.

102. Give a brief account of the researches of Prof. Fr. Sandberger in the Black Forest as to the relation which exists between the minerals found in veins and the nature of the rocks which the veins traverse. What light has been thus thrown on the origin of veins?

103. Explain the method pursued to find the twin axis of a macle (twin).

Describe the structure of the most common twins of Aragonite, Harmotome Gypsum, Orthoclase.

104. Describe the relations that exist between the optical properties of crystals and their other physical characters.

Give three instances in which the result of optical examination is not in harmony with direct crystallographic determinations, and suggest explanations of the apparent inconsistencies.

105. Give a short account of the most important contributions to geological science made by American geologists.

106. State the method of reasoning by which the Palæophysiography (i.e. the distribution of land and water) at successive geological periods may be inferred, and illustrate your answer fully by reference to the carboniferous period.

107. Give an account of the Graptolitidæ touching upon (i) the structure of a typical form, (ii) range in time, (iii) value of the group for classificatory purposes in Stratigraphical geology.

108. Describe the structure and development of a radial fibro-vascular bundle, and state where radial bundles are found.

109. What is meant by "negative pressure" in plants? How does it arise and how is its existence demonstrated?

What theory of water-transport is connected with the existence of negative pressure?

110. Discuss in a general manner the geographical distribution of Alpine plants.

Mention the *species* characteristic of the flora of any *one* topographical region with which you are acquainted, such as sea-coasts, river-banks, shady woods, chalky land, fens, or mountains, &c.

111. What are your views as to the significance of the process of conjugation amongst the Protozoa?

Give an account of the group of the Gregarinidæ, and the life-history of any one form.

112. Give an account of the chief modifications presented by the eyes of Invertebrates and discuss fully how far the several forms may be considered as of common or of independent origin.

113. State fully and critically examine the views at present held as to the evolution of the nervous and muscular systems.

114. Give an account of the branching of the bronchial tubes in the human lung, and of the deductions which have been drawn therefrom as to the morphological relations of the pulmonary lobes.

115. What parts of the brain are in anatomical connection with the optic nerve?

116. Describe the broad ligament of the uterus and the structures found in its layers, noticing the part which each structure takes in the mechanism of menstruation.

117. Discuss briefly the present state of the question as to the origin of fibrin.

118. Discuss the question of the extent to which food-stuffs absorbed by the alimentary canal become an integral part of the protoplasm of the body.

119. Mention the chief physiological deductions which have been made from observing the effects of atropin, muscarin, physostigmin (Calabar bean), veratrin and strichnia respectively in the tissues of the body.

SATURDAY, June 6, 1885. 1—4.

120. WRITE a short essay on one of the following subjects :

(1) The state of electrical science at the time of the publication of the first of Faraday's experimental researches (1831).

(2) The physical researches of Gauss.

(3) The history of the telescope.

121. Describe the difficulties which stand in the way of determining whether the radiation of the sun's heat and light is strictly constant; and state to what extent these difficulties have been overcome. In what manner could the "bolometer" be used in part of such an investigation and what advantage would it have over a thermopile or a black bulb thermometer?

122. Distinguish between the Thomson and the Peltier thermoelectric effects, and shew how each can be represented on a thermoelectric diagram.

123. Give a detailed account of the meaning you attach to the term *Acid*, and of the experimental data on which the interpretation of this term is based.

Describe a thermochemical method by which the basicity of an acid may be determined.

124. Shew how determinations of the heats of formation of isomeric carbon compounds may help to fix the structural formulæ of these compounds. Give instances to illustrate your answer.

125. Give a short account of the experiments undertaken by Bunsen, and by Deville and Debray, to determine the temperature of flame.

From the following data find the *calorific intensity* of (i) the combination of hydrogen with oxygen, (ii) the combination of carbon monoxide with oxygen, (iii) the combination of carbon monoxide with air.

[H, O] = 69000. Spec. heat of steam = .475. Latent heat of steam = 537 gram-units.
[CO, O] = 67200. Spec. heat of CO₂ = .2164. Spec. heat of nitrogen = .224.

Percentage of nitrogen in air = 79.3 by volume.

" oxygen " = 20.7 "

126. How may silica be detected in minerals, and how are sulphates distinguished from sulphides, and chlorides from bromides by blow-pipe experiments?

127. Discuss briefly the reasons which would lead you to believe that the systems of crystallography were absolutely distinct. How do the remarkable relations existing between the feldspars, and between the simple and double sulphates of potassium and ammonium, bear this out? Suggest an explanation of any difficulties which they may offer to your views.

128. Give briefly the principal results obtained by Exner as to the hardness of plane surfaces of crystals.

Apply his conclusions to draw freehand the approximate curves of hardness on the following planes of barytes: (1) the cleavage plane (110), (2) a face equally inclined to the three cleavage faces.

129. Describe the structure of a typical Palaeozoic Crinoid and give an account of the modifications shewn by the Crinoidea in later times. Mention the earliest appearance of the group and follow its subsequent history, noting particularly the period of maximum development.

130. Give a sketch of the recent contributions to our knowledge in respect to (i) the contour of the deep sea bed, (ii) the deposits being formed beyond a depth of 300 fathoms.

131. Explain Mallet's theory of vulcanicity and give the train of reasoning upon which his theory is based. Offer any criticisms upon it.

132. Describe the chief forms of branching exhibited by the inflorescence in Angiosperms.

133. Describe in detail the method of water-culture, giving some account of the more important contributions to knowledge due to the method.

134. Give a general account of the Myxomycetes.

135. Give a short account of the anatomy of an entoproctous Polyzoon.

Do you consider the Polyzoa to be a homogeneous group? Give the reasons for your view and briefly discuss the affinities of the group.

136. Give examples of terrestrial animals known to be descended from aquatic ancestors, and point out and explain the chief morphological changes accompanying the alteration in mode of life.

137. Discuss fully how far the several structures to which the term "mesoderm" is applied in different animals are to be regarded as of common or of independent origin.

138. Trace the abdominal portions of the lymphatics passing from the lower extremity, also those of the abdominal viscera. Describe carefully the systems of glands and the larger confluences of these vessels.

139. Discuss the mechanism of the chain of auditory ossicles in the middle ear, and the range of motion allowed by each of their articulations. Describe the muscles by which these movements are produced.

140. What are the distinctive peculiarities of the human thoracic and abdominal viscera, wherein they differ from those of lower animals?

141. About what amount of the various food stuffs may be taken as a normal diet for a man? What are the chief effects on the composition of the body of increasing in this normal diet the amount of (a) proteids, (b) carbohydrates, (c) fats? How do the salts of food affect nutrition?

142. Give an account of the influence of the nervous system on the spleen. What evidence is there as to the functions of the spleen?

143. What structures in vertebrates are known to be automatically contractile independently of nervous impulses? How do you represent to yourself the tissue changes which bring about this automatic action?

MONDAY, June 8, 1885.

PRACTICAL CHEMISTRY.

[No candidate is to attempt more than three questions.]

1. To what class of carbon compounds does A belong?
Find its melting and boiling points; and also, as far as you can by purely chemical means, its molecular weight.
2. B is nitric oxide. Determine its composition by volume by explosion with hydrogen.
3. Examine C by the spectroscope.
4. Determine as accurately as you can the equivalent of the metal the carbonate of which, D, is given you.
5. Estimate the amounts of calcium and phosphoric acid in E.
6. From 150 grams potassium ferrocyanide prepare as much urea as you can.

TUESDAY, June 9, 1885. 10.

HUMAN ANATOMY.

I. MAKE the appropriate measurements of size and capacity of the two skulls placed before you, discuss their characters and state your opinion as to the races to which they belong.

II. Dissect the part placed before you and so dispose it upon the table as to show to the best advantage those structures asked for on your ticket.

Place numbers upon *all* the structures you expose and leave beside the part a written key to the numbers you place upon the preparation.

TUESDAY, June 9, 1885. 10.

GEOLOGY (PRACTICAL).

1. DESCRIBE fully and accurately the genera 1, 2, 3, 4. Name each one and give its geological range.
2. Give the characters by which you distinguish between the genera 5 and 6; 7 and 8, and name them.
3. Describe the structures exhibited in the specimens 9 and 10 and any peculiarities in 11 and 12.
4. Name the rock specimens 13—16, giving only the characters by which you identify each one.
5. Describe fully the macroscopic and microscopic characters of the rock specimens 17, 18.
6. Draw sections along the lines *AB* and *CD* on the map laid before you so as to shew the relation of the beds.

Describe and explain the principal geological facts recorded on that portion of the map which is enclosed by the black line.

WEDNESDAY, *June* 10, 1885. 10—4.

PHYSIOLOGY. PRACTICAL WORK.

1. PREPARE with a freezing microtome sections of the tissue (*a*). Stain, mount and describe two sections.
 2. The tissue (*b*) is embedded in celloidin, cut a section, stain it, and mount it in Canada balsam.
 3. Make rough sketches of the specimens (*c*), (*d*), (*e*), indicating the tissues or structures in the specimens which you recognize.
 4. Make a gold chloride preparation of the septum auricularum of the frog.
 5. Demonstrate on a frog the effects of stimulating the anterior and the posterior roots of a spinal nerve.
 6. What kind of sugar is contained in the fluid (*A*)?
 7. What substances of physiological importance are contained in the fluid (*B*)?
 8. Vivâ voce.
-

THURSDAY, *June* 11, 1885. 10—1.

BOTANY.

1. MAKE preparations of the ovule of *Pinus*. Give an account of your results, illustrated by sketches.
 2. Describe the microscopic specimens given to you.
-

THURSDAY, *June* 11, 1885. 2—5.

BOTANY.

1. MAKE a series of preparations to illustrate the thickening of *A*. Give an account of the results established by your preparations.
 2. Describe and discuss the specimen *B* (flowering plant).
-

FRIDAY, June 12, 1885. 10—4.

PRACTICAL PHYSICS.

I.

N.B. *Indicate, whenever possible, the degree of accuracy aimed at in the experiments.*

1. FIND the coefficient of cubical compressibility of copper.
2. Determine the effect of air dissolved in water upon the density of the water.
3. Determine the distance of the centre of gravity of the balance below the central knife-edge.
4. Arrange an apparatus to find the variation of the boiling-point of water between pressures of 740 and 780 mm.
5. Find the weight of aqueous vapour present in a cubic metre of air in the presence of a 10 p.c. solution of sulphuric acid.
6. Compare the time of vibration of the tuning-fork, loaded as at present, with that of the given pendulum.
7. Determine the ratio of the two specific heats of coal-gas.
8. Find the position of the optic axes of the given plate of quartz and determine its thickness by an optical method.
9. Given the index of refraction of the given lens, find its focal length.
10. Given a number of similar incandescent lamps (20 volts) and a constant electromotive force of about 67 volts, determine the relation between the current and the illuminating power in a lamp.
11. Find the variation of the electromotive force of the given cell with variation of temperature.
12. Find the capacity and insulation resistance of the given condenser.
13. Determine the electric conductivity of solutions of sulphuric acid in water.
14. Find the intensity of the magnetic field at the centre of the given semi-circular magnet.

II.

- i. Determine the capillary constants of the given liquid.
 - ii. Determine the moment of inertia of the given pendulum.
 - iii. Given a tuning-fork of known pitch determine the correction for the open end of organ pipes.
 - iv. Determine the coefficient of expansion of glass by means of the weight thermometer.
 - v. Find the specific gravities of different mixtures of the two given liquids and plot a curve shewing the contraction on mixing.
 - vi. Find the mean specific heat of mercury for three intervals of temperature between 0°C and 100°C .
 - vii. Find the index of refraction of the material of the given lens for sodium light.
 - viii. Determine the specific rotatory power of sugar for sodium light.
 - ix. Arrange two sets of complementary colours with the given discs.
 - x. Determine the internal resistance of the given battery.
 - xi. Compare the self-induction of a coil with the mutual induction between it and a second coil.
 - xii. Determine by means of the sextant the altitude of the sun (if visible).
 - xiii. Determine the temperature coefficient of german silver.
 - xiv. Determine by the unifilar magnetometer the horizontal intensity of the Earth's magnetic field.
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MATHEMATICAL TRIPOS.

PART I.

THURSDAY, *May* 21, 1885. 9 to 12.

1. IN any right-angled triangle, the square on the hypotenuse is equal to the sum of the squares on the sides containing the right angle.

From the right angle of a right-angled triangle a perpendicular is let fall on the hypotenuse. Prove by Book I. that the square on this perpendicular is equal to the rectangle contained by the segments into which it divides the hypotenuse.

2. The opposite angles of any quadrilateral inscribed in a circle are together equal to two right angles.

A circle of constant magnitude passes through a fixed point A and intersects two fixed lines AB , AC in B and C . Prove that the locus of the orthocentre of the triangle ABC is a circle.

3. Describe a circle about a given triangle.

A line drawn through O the orthocentre of the triangle ABC intersects the circles described about the triangles BOC , COA , AOB in points P , Q , R respectively. Prove that the perpendiculars from P , Q , R on BC , CA , AB respectively intersect in a point on the circle described about ABC .

4. If the angle of a triangle is bisected by a straight line cutting the base, the segments of the base shall have the same ratio as the other sides of the triangle; and if the segments of the base are to each other as the other sides of the triangle, the straight line drawn from the vertex to the point of section bisects the vertical angle.

AB is the base of a triangle ABC whose sides are the segments of a line divided in extreme and mean ratio. CP is the bisector of the angle C , and CQ the perpendicular from C on AB . Prove that the square on CP is equal to twice the rectangle contained by PQ and AB .

5. If the sides of two triangles about each of their angles are proportionals, the triangles shall be equiangular, and shall have the angles opposite the homologous sides equal.

D is the middle point of the hypotenuse AB of a right-angled triangle ABC . DEF is a line drawn perpendicular to AB , and such that the angles FCA and ECB are equal. Prove that $DF \cdot DE = DC^2$.

6. Two straight lines which are each of them parallel to the same straight line, although not in the same plane with it, are parallel to one another.

A tetrahedron is cut by a plane so that the section is a rhombus. Prove that the area of this rhombus is to the area of a parallelogram, whose sides are equal in magnitude and parallel in direction to the edges of the tetrahedron which are parallel to the plane of the rhombus, as the rectangle contained by these edges is to the square on a line equal to their sum.

vii. If QVQ' is a double ordinate of a diameter PV of a parabola, prove that QV is a mean proportional between PV and the parameter of the point P .

TQ and TR , tangents to a parabola, meet the tangent at P in X and Y , and TU is drawn parallel to the axis, meeting the parabola in U . Prove that the tangent at U passes through the middle point of XY , and that, if S is the focus,

$$XY^2 = 4SP \cdot TU.$$

viii. Prove that the normal at any point of an ellipse bisects the angle between the focal distances of that point.

ACA' and BCB' are the transverse and conjugate axes of an ellipse, of which S and S' are the foci. P is one of the points of intersection of this ellipse and a confocal hyperbola, and aCa' is the transverse axis of the hyperbola.

Prove that $SP = Aa$, $S'P = A'a$, and $aB = CP$.

ix. Prove that the perpendiculars from the foci of an ellipse on any tangent meet the tangent on the auxiliary circle, and that the semi-conjugate axis is a mean proportional between their lengths.

If a parabola, having its focus coincident with one of the foci of an ellipse, touches the conjugate axis of the ellipse, a common tangent to the ellipse and parabola will subtend a right angle at the focus.

x. The tangent at any point P of a hyperbola meets the transverse axis in T and the conjugate axis in t , and PN is the ordinate.

Prove that $CN \cdot CT = AC^2$, and $PN \cdot Ct = BC^2$.

Tangents are drawn to a rectangular hyperbola from a point T in the transverse axis, meeting the tangents at the vertices in Q and Q' . Prove that QQ' touches the auxiliary circle at a point R such that RT bisects the angle QTQ' .

xi. Prove that the asymptotes of a hyperbola intersect the directrices in the same points as the auxiliary circle, and that the lines joining the corresponding foci with the points of intersection are tangents to the circle.

Prove that if A , B and C are three given points, two parabolas can be drawn through A and B with C as focus, and that the axes of these parabolas are parallel to the asymptotes of the hyperbola which can be drawn through C with its foci at A and B .

xii. Prove that the section of a cone by a plane, which is not perpendicular to the axis, and does not pass through the vertex, is an ellipse, parabola, or hyperbola.

Two cones which have a common vertex, their axes at right angles, and their vertical angles supplementary, are intersected by a plane at right angles to the plane of their axes. Prove that the distances of either focus of the elliptic section from the foci of the hyperbolic section are equal respectively to the distance from the vertex of the ends of the transverse axis of each, and that the sum of the squares on the semi-conjugate axes is equal to the rectangle contained by those distances.

THURSDAY, May 21, 1885. 2—5.

1. (i) APPLY the 'unitary method' to obtain an *Arithmetical* solution of the following:

The price of wine being raised 6 shillings a dozen, 6 bottles less than before can be bought for 8 guineas. What is the present price?

(ii) Explain why in the mixture of two ingredients, the price of the mixture divides the interval between the prices of the ingredients per common unit in the inverse ratio of the quantities of the ingredients.

2. Define the Highest Common Divisor of two algebraical expressions, and prove the ordinary rule for finding it.

If A, B, C, D are four expressions such that D is composed entirely of factors which it has in common with one or other of the remaining three: and if (AB) denotes the H.C.D. of A and B , (ABC) that of A, B and C , and so on; prove that

$$(ABCD) = D \frac{(DBC)(DCA)(DAB)}{(DA)(DB)(DC)}.$$

3. Solve the equations,

$$(i) \quad \frac{x-a}{x-b} + \frac{x-b}{x-c} + \frac{x-c}{x-a} = 3,$$

$$(ii) \quad \begin{cases} x^2 - yz = ax \\ y^2 - zx = by \\ z^2 - xy = cz \end{cases}.$$

Prove that the only real solutions of the equations,

$$ax^2 + byz(y+z) + c(x^2 - yz) + d = 0,$$

$$ay^2 + bzx(x+z) + c(y^2 - zx) + d = 0,$$

$$az^2 + bxy(x+y) + c(z^2 - xy) + d = 0,$$

occur when two at least of x, y, z are equal to one another.

4. Find the conditions that the expression $ax^2 + 2bx + c$

(i) may have always the same sign as a for real values of x ;

(ii) may have a minimum value for a value of x between 0 and 1.

Prove that
$$\frac{abx^2 - a^2x^2 + (a+b)^2x^2 - a^2x + ab}{(x+1)^2}$$

has a minimum value, for a value of x between 0 and 1.

5. Assuming the Binomial Theorem for a positive integral index, prove it for a fractional and negative index.

Expand $\{1 + ny + n(n-m)y^2/2\}^m + \{1 + my\}^n$

in powers of y as far as y^2 : and shew *a priori* that the coefficient of y^2 must contain $2m - n$ as a factor.

6. Find for what value of r the number of combinations of n different things r together is greatest.

If of $3n$ letters there are n a 's, n b 's, and n c 's, prove that the number of combinations of these r together is equal to the number of their combinations $3n - r$ together; and if $r > n$, and $< 2n + 1$, prove that the number of combinations is

$$\frac{1}{2}(n+1)(n+2) + (r-n)(2n-r).$$

Shew also that the maximum number of combinations is $\frac{1}{2}\{3(n+1)^2 + 1\}$ or $\frac{3}{4}(n+1)^2$ according as n is even or odd.

vii. Prove the following formulæ geometrically,

$$(i) \quad \sin A + \sin B = 2 \sin \frac{1}{2}(A+B) \cos \frac{1}{2}(A-B),$$

$$(ii) \quad \frac{\pi}{4} = \tan^{-1} \left(\frac{m}{n} \right) - \tan^{-1} \frac{m-n}{m+n},$$

$$(iii) \quad \sin^2 \alpha + \sin^2 \beta = \sin^2 (\alpha + \beta) - 2 \sin \alpha \sin \beta \cos (\alpha + \beta).$$

viii. If $\cot^{-1} x - \cot^{-1} (x+2) = 15^\circ$, find x .

$$\text{If} \quad \tan \left(\frac{\pi}{4} + \frac{\psi}{2} \right) = \tan^2 \left(\frac{\pi}{4} + \frac{\phi}{2} \right)$$

$$\text{prove that} \quad \sin \psi = 5 \sin \phi \frac{(1 + \alpha^2 \sin^2 \phi)(1 + \beta^2 \sin^2 \phi)}{\left(1 + \frac{1}{\alpha^2} \sin^2 \phi\right) \left(1 + \frac{1}{\beta^2} \sin^2 \phi\right)},$$

and find α and β .

ix. If $A+B+C=\pi$, prove the formulæ,

$$(i) \quad \frac{\tan A}{\tan B \tan C} + \frac{\tan B}{\tan C \tan A} + \frac{\tan C}{\tan A \tan B} \\ = \tan A + \tan B + \tan C - 2(\cot A + \cot B + \cot C),$$

$$(ii) \quad \sin \frac{1}{2} A + \sin \frac{1}{2} B + \sin \frac{1}{2} C - 1 = 4 \sin \frac{1}{4} (\pi - A) \sin \frac{1}{4} (\pi - B) \sin \frac{1}{4} (\pi - C),$$

and if $A+B+C=n\pi$,

$$(iii) \quad \sin 2A + \sin 2B + \sin 2C = \pm 4 \sin A \sin B \sin C,$$

$$(iv) \quad \cos 2A + \cos 2B + \cos 2C + 1 = \mp 4 \cos A \cos B \cos C,$$

and determine when the upper sign is to be used.

x. Express the area of a triangle in terms of the sides.

Shew how to construct the right-angled triangle of minimum area which has its vertices on three parallel lines; and if a, b are the distances of the middle line from the other two, shew that the hypotenuse makes with the parallel lines an angle

$$\cot^{-1} \frac{a-b}{a+b}.$$

If the given angle of the triangle instead of being a right angle is equal to α , find the angle which the side opposite to it makes with the parallel lines when the area is a minimum.

xi. Shew how to solve a triangle when two sides and the included angle are given.

If two sides of a triangle are 71 and 25 feet and the contained angle $69^\circ 32'$ calculate the remaining angles and side, and shew that if a small error has been made in the measurement of the smaller side it will affect the calculated value of the third side very slightly.

xii. Find the radii of the inscribed and escribed circles of a triangle; and if these are r, r_1, r_2, r_3 and that of the circumscribed circle is R , prove that

$$r_1 + r_2 + r_3 - r = 4R.$$

If D, E, F are the centres of the escribed circles and O that of the inscribed circle, prove that

$$\frac{EF^2}{r_2 r_3} + \frac{FD^2}{r_3 r_1} + \frac{DE^2}{r_1 r_2} = \frac{OD^2}{r r_1} + \frac{OE^2}{r r_2} + \frac{OF^2}{r r_3} = 8 \frac{R}{r}.$$

FRIDAY, May 22, 1885. 9 to 12.

1. STATE and prove the triangle of forces.

O is any point on the circle circumscribing a triangle ABC , and OL, OM, ON are the perpendiculars from O on the sides. The line LMN meets the perpendiculars from A, B, C on the opposite sides in P, Q, R respectively. Prove that if forces act at O represented by OL, OM, ON, OP, OQ, OR their resultant is represented by $3OK$, where K is the orthocentre.

ii. Having given the positions of the centre of gravity of a system of bodies and of any number of the bodies of the system, shew how to find the centre of gravity of the remainder of the system.

$AD(c)$ is the diameter of a circular section of a right circular cone of vertical angle 2α , and two planes are drawn through the tangent to the circle at A each inclined to the axis of the cone at the angle θ and intersecting the surface in two ellipses. Find in terms of c, α, θ the distance from A , in the direction AD , of the centre of gravity of the surface of the cone between the two planes, and prove that when the angle between the two planes is indefinitely diminished, the ultimate position of the centre of gravity of this surface divides AD in the ratio of three to one.

iii. State the laws of statical friction and explain how the coefficient of friction between two bodies may be found experimentally.

A heavy rod, of length $2l$, rests horizontally on the inside rough surface of a hollow circular cone, the axis of which is vertical and the vertex downwards. If 2α is the vertical angle of the cone and if the coefficient of friction is less than $\cot \alpha$, prove that the greatest height of the rod, when in equilibrium, above the vertex of the cone is

$$l \cot \alpha \left\{ \frac{1 + \cos^2 \alpha + \sin \alpha \sqrt{(\sin^2 \alpha + 4\mu^2)}}{2(1 - \mu^2 \tan^2 \alpha)} \right\}^{\frac{1}{2}}.$$

4. A heavy cube is placed with one face resting on a rough inclined plane. Prove that as the inclination of the plane is gradually increased the cube will begin to roll or slide according as the coefficient of friction between the cube and the plane is $>$ or $<$ 1.

A heavy cube with its vertical faces smooth is placed on a rough horizontal plane and a ladder is placed with the upper end leaning against it. A man now ascends the ladder and when he reaches a certain height the equilibrium ceases. Examine the character of the ensuing disturbance.

v. Assuming the conditions of equilibrium of a set of forces in one plane, deduce the principle of virtual work.

A regular pentagon $ABCDE$, formed of five equal heavy rods jointed together, is suspended from the joint A , and the regular pentagonal form is maintained by a rod without weight joining the middle points K, L of BC and DE . Prove that the stress at K or L is to the weight of a rod in the ratio of $2 \cot 18^\circ$ to unity, and find the stresses at B and C .

6. A perfectly rough body symmetrical with respect to a plane through its centre of mass rests on a rough surface symmetrical with respect to the same plane, the common normal being vertical. Prove that for rotations parallel to the plane of symmetry the equilibrium is stable, neutral or unstable according as

$$\frac{1}{h} > \frac{1}{\rho} + \frac{1}{\rho'},$$

where h is the distance of the centre of gravity of the body from the point of contact, and ρ, ρ' are the radii of curvature of the sections by the vertical plane.

A solid homogeneous hemisphere of radius a and weight W rests in apparently neutral equilibrium on the top of a fixed sphere of radius b . Prove that $5a = 3b$. A weight P is now fastened to a point in the rim of the hemisphere. Prove that, if $55P = 18W$, it still can rest in apparently neutral equilibrium on the top of the sphere.

vii. Enunciate Newton's Laws of Motion, and explain the two statements contained in the second Law.

Weights P and W equilibrate on a wheel and axle, the mass of which may be neglected. A weight W is attached to P , and, after the lapse of one second, another weight W is attached to the ascending weight W . Prove that, after the lapse of another second, the velocity of the ascending weight $2W$ is

$$gb(2a - b)/(a^2 + ab + 2b^2),$$

a being the radius of the wheel and b the radius of the axle.

viii. Prove that the times of descent of a heavy particle down all chords of a sphere from its highest point are the same, and find the line of shortest descent from a given point to a given sphere.

Prove that the locus of the points from which the times of descent to three given points in space are the same is a rectangular hyperbola; and that the locus of the points from which the times of shortest descent to three equal spheres, given in position in space, are the same is a rectangular hyperbola.

9. Find the range of a particle projected from a given point with given velocity on an inclined plane through the point.

An imperfectly elastic particle (coefficient of restitution e) is projected from a point in a plane inclined to the horizontal at an angle γ . The direction of projection makes an angle β with the normal to the plane, and the plane through these two directions makes an angle α with the line of greatest slope on the inclined plane. When the particle meets the plane for the n^{th} time, it is in the horizontal line through the point of projection. Prove that

$$(1 - e^n) \tan \gamma = (1 - e) \tan \beta \cos \alpha,$$

and find the distance of the particle from the point of projection.

10. Two imperfectly elastic balls impinge. Prove that the kinetic energy after impact is less than that before impact.

Two equal particles, whose coefficient of restitution is $\frac{1}{2}$, are hung from the same point by equal strings. The particles are now drawn aside till the strings are in the same horizontal line, and are then let go. Prove that after ten impacts the arc of rebound of each particle will be $< 5'$.

xi. Explain what are meant by the kinetic energy and the potential energy of a system, and how they are measured quantitatively.

Find the charge of powder required with an elevation of 15° to send a 32 lb. shot over a range of 1600 yards, it being known that the initial velocity is 1600 feet per second when the charge is half the weight of the shot.

If the gun is moveable on a smooth horizontal stand, and if the weight of the gun is n times the weight of the shot, and the charge is that just found, prove that the range is

$$6400n / (4n + 2 - \sqrt{3}) \text{ yards.}$$

12. Prove that the time of complete oscillation of a particle in a cycloid with its axis vertical and vertex downwards is $4\pi(a/g)^{1/2}$, where a is the radius of the generating circle.

Two clocks identical in all respects are placed at opposite points on the earth's surface, at one of which the moon is vertically overhead. Assuming the earth and moon to remain at rest, and that the mass of the earth is 80 times that of the moon, shew that, if the clocks are started together, they will at the end of twenty-four hours differ by about three-tenths of a second.

FRIDAY, May 22, 1885. 2 to 5.

1. DEFINE fluid pressure, and explain how fluid pressure at a point is measured.

A series of conical shells made of paper of weight w per unit area have equal vertical angles 2α , and circular rims of radii $a, 2a, \dots, na$ respectively. They stand one inside another, with their rims resting on a slightly damped horizontal table. Within the smallest cone, and between successive cones, are gases of such densities that each cone is on the point of rising from the table, the damp surface of which exerts a vertical capillary force κ per unit length of rim. Find the pressures of the respective gases, and shew that if all the rims except the outside one become dry so that the gases mix, the outside cone will rise unless held down by an additional force

$$\frac{1}{12}\pi(n-1)a\{3n(n-1)wa\operatorname{cosec}\alpha + 4\kappa(2n-1)\}.$$

2. Find the conditions of equilibrium of a floating body, and distinguish between the different kinds of stability it may possess.

A cylinder containing water floats in a liquid, with its axis vertical. Prove that its stability for angular displacements will be unaffected if a certain weight of water is removed and a spherical ball of equal weight is placed in the cylinder so as to float in the water partially immersed, even though the ball touch the cylinder.

3. Explain the action of a siphon.

A siphon-tube with vertical arms filled with mercury (ρ) and closed at both ends is inserted into a basin of water (σ). When the stoppers are removed, examine what will ensue, and prove the following results if the barometer is sufficiently high:

(1) If k , the whole length of the outside arm, exceeds h , the whole length of the immersed arm, the mercury will flow outwards and the water will follow it.

(2) If $h > k$, the end of the immersed tube must be at a depth below the free surface of the water exceeding $(h-k)\rho/\sigma$ in order that the mercury may not flow back into the basin.

4. Describe the condenser: and find the change produced in the density of the air within the receiver after a given number of strokes of the piston.

In a condenser the motion of the piston is checked by permanent stops at heights h, k from the receiver-valve A . Find the relation between the heights of the piston above A at which the piston-valve and the valve A open in any upward and in the next downward stroke respectively. Also represent graphically the variations of pressure upon these valves during these strokes.

5. Describe the experimental proofs of the laws of Boyle and Charles.

A piston of weight W serves as a stopper to confine some gas within a vertical cylinder open at the top. If h is the equilibrium height of the base of the piston above the base of the cylinder, and if it is displaced through a small distance x , prove that as soon as the temperature of the gas has recovered its previous value, the energy of the system will be augmented by $Wx^2/2h$ nearly.

6. In the case of a liquid rotating uniformly in relative equilibrium about a vertical axis, determine the pressure at any point.

Liquid of density ρ is standing in a fixed smooth circular cylinder with axis vertical and of radius a . This is made to revolve about the axis with angular velocity ω , none of the base being exposed. A paraboloidal solid of density σ , shaped just to fit the cavity in the liquid, is gently placed upon the surface so that its flat top just passes through the highest rim of the liquid. If $\rho > \sigma$, shew that before it reaches its equilibrium position, the liquid rising round it, it must sink through a depth

$$\{1 - (\rho - \sigma)^2/\rho^2\}^{\frac{1}{2}}\omega^2 a^2/4g,$$

supposing no interference with the base to take place.

vii. Prove that a ray of light makes the same angles before and after reflection by a plane with any line in the plane.

A ray is reflected in any manner by the sides of a hollow prism polished inside. Prove that all the portions of the path of the ray are parallel to the sides of a right circular cone.

viii. State the laws of refraction of light.

A ray of light is refracted through a series of media bounded by parallel planes. Shew that the directions of the ray in the different media may be obtained by drawing a straight line across a series of concentric circles whose radii are proportional to the refractive indices of the media and joining the points of section to the centre.

Shew that, if the ray is incident on a medium of index μ at grazing incidence, the angle turned through when it reaches a medium of index μ' is $\cos^{-1} \mu/\mu'$.

Generalize the construction for the case when the bounding planes are not parallel but are all parallel to one straight line.

ix. A small object is viewed directly through a sphere of glass. Find the magnification, and shew that to make it a maximum the eye must be placed as close as possible to the sphere.

A spherical drop of mercury is surrounded by a concentric spherical shell of glass, the mercury not filling the cavity. Shew that to an eye outside the mercury appears of its natural size; and explain how this is consistent with the fact that if the mercury fills the cavity it appears magnified.

x. Shew that the illumination at a point of a plane produced by a uniformly bright surface may be found thus. Construct a cone with the point as vertex enveloping the bright surface and project the area which this cone includes on the surface of a sphere of unit radius with the point as centre on the illuminated area, then the illumination is equal to the intrinsic brightness of the surface multiplied by the area of this projection.

A uniformly bright isosceles triangle is placed with its plane vertical and its base on a horizontal table. Prove that the illumination at a point O of the table such that the line joining O to the middle point of the base is perpendicular to the base and equal to half of it, varies as

$$\frac{\pi}{4} - \frac{a}{(2b^2 - a^2)^{1/2}} \cos^{-1} \frac{a}{b\sqrt{2}},$$

where $2a$ is the length of the base and b that of either side.

xi. In any optical instrument formed of lenses and mirrors on the same axis, prove that the magnifying power is equal to the ratio of the breadth of an incident pencil at the object-glass to the breadth of the same pencil at the eye-glass.

If m is the magnifying power of such an instrument when adjusted for an eye which sees clearly with the incident light parallel, and if the eye-glass (focal length f) is moved till the instrument is in adjustment for an eye whose distance of distinct vision is δ , shew that the magnification is increased by mf/δ .

xii. Describe the construction of a compound microscope.

A compound microscope is used by a person whose distance of distinct vision is δ , and the magnification of a small object is measured. A plate of glass of known small thickness is now introduced between the object and the object-glass, and the microscope is adjusted by moving the eye-piece, and the magnification again measured. Deduce from these measures the refractive index of the glass and the displacement of the eye-piece, supposing the powers of the object-glass and eye-piece known.

SATURDAY, May 23, 1885. 9 to 12.

1. If two circles intersect each other at A and B , the locus of the middle point of a chord PAQ drawn through A is a circle.

ii. The side BC of a triangle ABC is trisected at M, N . Circles are described within the triangle, one to touch BC at M and AB at H , the other to touch BC at N and AC at K . If the circles touch one another at L , prove that CH, BK pass through L .

3. Two circles touch each other internally at O , and a chord $ABCD$ is drawn. The tangent at A intersects the tangents at B and C in G and E , and the tangent at D intersects the tangents at B and C in F and H . Prove that OA bisects the angle GOE , and that $EFGH$ can be inscribed in a circle which touches at O both the given circles.

4. If AA' is the transverse axis of an ellipse, and if Y, Y' are the feet of the perpendiculars let fall from the foci on the tangent at any point of the curve, prove that the locus of the point of intersection of AY and $A'Y'$ is an ellipse.

5. A is a given point in the plane of a given circle, and ABC a given angle. If B moves round the circumference of the circle, prove that, for different values of the angle ABC , the envelopes of BC are similar conics, and that all their directrices pass through one or other of two fixed points.

vi. If $\Sigma(x_r) \equiv x_1 + x_2 + x_3 \dots + x_n = c$,
find the value of

$$\Sigma x_r x_s \left\{ \frac{1}{c-x_r} + \frac{1}{c-x_s} \right\}, \text{ where } r \text{ and } s \text{ are unequal;}$$

and if $\Sigma(x_r) = c, \Sigma(x_r^2) = c^2, \Sigma(x_r^3) = c^3, \dots, \Sigma(x_r^{k-1}) = c^{k-1}$,

prove that $\frac{1}{c^k} \Sigma \left\{ \frac{x_r^k}{c-x_r} \right\} - \Sigma \left\{ \frac{1}{c-x_r} \right\} + \frac{n+k-1}{c} = 0$.

vii. Prove that the equation

$$x_{2n+1} = 2x_{2n}x_1 + x_{2n-1}x_2 + x_{2n-2}x_3 + \dots + x_{n+1}x_n$$

is satisfied by

$$x_{2n} = \frac{1}{2^{2n}}, \quad x_{2n+1} = \frac{1}{2^{2n+1}}.$$

8. Prove that the hour-hand, the minute-hand, and the seconds-hand of a watch can only point simultaneously in the same direction once in twelve hours; and find the time when the seconds-hand is $10\frac{1}{2}$ seconds divisions ahead of the other two which are pointing in the same direction.

ix. If $\frac{x}{\alpha \cos \theta + \beta} = \frac{y}{\alpha + \beta \cos \theta}$, and $\frac{x}{\alpha} + \frac{y}{\beta} = c$;

prove that $c\alpha\beta \sin \theta$ is a mean proportional between

$$x^2 - 2xy \cos \theta + y^2 \text{ and } \alpha^2 + 2\alpha\beta \cos \theta + \beta^2.$$

x. A pair of equal rods AB, AC are hinged together at A and have rings at B, C . These rings are free to slide along fine rough (μ) straight wires OB, OC' in the same vertical plane equally inclined at an angle α to the vertical. Shew that in the limiting positions of equilibrium the angle between the rods is either

$$2 \tan^{-1} 2 \frac{1 + \mu \tan \alpha}{\tan \alpha - \mu} \text{ or } 2 \tan^{-1} 2 \frac{1 - \mu \tan \alpha}{\tan \alpha + \mu}.$$

xi. An old Danish steelyard, originally of weight W lbs., and accurately graduated, is found coated with rust. In consequence of the rust, the apparent weights of two known weights of X lbs and Y lbs are found when weighed by the steelyard to be $(X-x)$ lbs, $(Y-y)$ lbs respectively. Prove that the centre of gravity of the rust divides the graduated arm in the ratio $W(x-y) : Yx - Xy$; and that its weight is, to a first approximation,

$$\frac{W+Y}{X-Y} x + \frac{W+X}{Y-X} y.$$

12. A number of perfectly elastic particles are projected, at the same instant, from a point in a smooth horizontal plane of unlimited extent. Prove that the path of the centre of gravity of these particles will be a curve with a succession of salient points, the arcs between the salient points being portions of the same parabola.

13. In the system of equal pullies in which each hangs by a separate string, the strings and the outer surfaces of the pullies are perfectly rough, and the pullies revolve about their axes which are smooth. If when there is equilibrium the power (a hanging weight over a smooth bar) is doubled, prove that the acceleration of the weight W is

$$3g \cdot \frac{W + w(2^n - 1)}{3W(2^{n+1} + 1) + w(2^n - 1)\{3 \cdot 2^{n+1} + k^2(2^n + 1)\}},$$

where w is the weight of each pulley, and k a constant ratio depending upon the construction of a pulley.

14. Having given two centres of force at S and S' , of equal strength, each attracting inversely as the square of the distance, prove that a body projected from any point in SS' between S and S' , perpendicular to SS' with the velocity from infinity, will describe a hyperbola of which S and S' are the foci.

xv. Two equal spherical bodies, attracting according to the law of nature, are moving towards each other in parallel lines with equal velocities. If the distance between them is very great compared with the distance between the parallel lines, find the ultimate divergence of their lines of motion from their original direction.

16. A railway train, travelling with a given acceleration, arrives at an incline, and, after ascending to a ridge, descends at the same incline on the other side. Assuming that the pull of the engine and the resistance are the same throughout, determine the levels of the water surface in the boiler in going up and down the incline, and prove that the difference of the levels is equal to the angle between the inclines.

17. A thin conical shell, vertical angle 2α , is bounded by a plane inclined at an angle θ to the axis of the cone, and is closed by an elliptic lamina of the same substance and thickness as the shell. If the shell is now held under water with the axis of the cone horizontal, prove that the whole pressures on the curved surface and on the elliptic base are in the ratio of $\sin \theta$ to $\sin \alpha$.

Prove also that if a heavy particle, the weight of which is to the weight of the shell and its base together in the ratio of $\tan \alpha$ to $\tan \theta - \tan \alpha$, is attached to that point of the elliptic base which is nearest the vertex, the shell will float with the axis of the cone vertical, and the elliptic base above the surface, in any liquid the density of which exceeds a certain determinable density.

xviii. A ray of light is reflected at each of three plane mirrors which are all parallel to one line, and the final direction of the ray is parallel to its direction before first incidence. Shew that the incident ray must be parallel to one of three fixed planes, and the portions of the ray after first and second reflexions parallel to the other two; and find the positions of these planes.

xix. Assuming the orbits of the Earth and Jupiter to be circles, P to be Jupiter's period, and one of Jupiter's satellites to describe round its primary a circular orbit of radius s in period S ; find at any time the ratio of the aberration of this satellite as seen from the Earth when in superior conjunction with its primary to its aberration when in inferior conjunction, neglecting the change in the elongation of Jupiter from the Earth in the time between the two conjunctions. If the Earth is moving towards Jupiter, prove that this ratio exceeds unity by $2Ps/Sd$ nearly, where d is a mean proportional between Jupiter's greatest and least distances from the Earth.

SATURDAY, May 23, 1885. 2 to 5.

1. STATE and prove Lemma I.

ABC is a triangle. Through a fixed point O in BC any chord PQ is drawn meeting the sides AB, AC in P and Q . Find the limiting position of the chord of intersection of two consecutive positions of the circle described on PQ as diameter, and prove that it makes with PQ an angle

$$\tan^{-1} \frac{OP \cot APO + OQ \cot AQO}{2(OP \sim OQ)}.$$

2. State and prove Lemma X.

A body starts from rest under the action of a force tending to a fixed point and proportional to the square of the time since the beginning of the motion. Shew that the space described by the body at the end of any time is proportional to the fourth power of that time.

3. State and prove Prop. 1.

S and H are the foci of an ellipse, and a particle describes the second negative pedal of the ellipse constructed with S as pole under a central force to S . Prove that the velocity at any point of this orbit varies inversely as $SP \cdot CD$, where P is the corresponding point on the ellipse and CD the semi-diameter conjugate to CP .

4. Prove that the force under which a body will describe a circle varies inversely as $SP^2 \cdot PP'^2$, where S is the centre of force and PP' the chord of the circle through S .

If points in the orbit are chosen such that the squares of their distances from the centre of force are in arithmetic progression, prove that the corresponding velocities are in harmonic progression.

5. If a body revolves in an equiangular spiral, find the law of the force tending to the pole of the spiral.

If O is the pole of an equiangular spiral and S any point in its plane, prove that the force tending to S , under which a particle can describe the spiral, is proportional to

$$(OP \cdot SP^2 \sin^2 \phi)^{-1},$$

where ϕ is the angle SP makes with the tangent at P .

6. Determine the law of force to the focus under which a particle will describe an ellipse.

A particle of mass m is describing an ellipse about a focus S . When it arrives at a point P it receives a blow R which causes it to describe a confocal hyperbola. Prove that

$$R^2 = \frac{m^2 \mu (2CA - SP)^2}{CA \cdot SP(CA - SP)}, \text{ and } \tan^2 \theta = \frac{CA}{CA - SP},$$

where μ is the force at unit distance, and θ the angle which the direction of R makes with the tangent to the ellipse at P .

vii. Enumerate the errors of a transit instrument, and explain how level error may be measured and corrected.

At a place (N. lat. 30°) a circumpolar star is observed with a transit, whose level error is equal to the north polar distance of the star. Shew that one interval between a pair of transits is approximately eight hours and the other sixteen.

viii. Describe the reading-microscope, and shew how the zenith distance of a star may be found by direct observation with the transit circle.

κ Cancrī (whose zenith distance lies between $40^\circ 15' 0''$ and $40^\circ 20' 0''$) was observed at Greenwich on Feb. 10, 1882. The six micrometers read $3^r.204$, $3^r.324$, $3^r.027$, $3^r.276$, $3^r.211$, $3^r.149$ and the telescope-micrometer $20^r.64$.

Assuming that $4^r.9$ of each reading micrometer corresponds to $5'$ of arc, that 20^r is the reading of the telescope-micrometer for the middle of the field, and that the correction for the telescope-micrometer = its micrometer reading $\times 34''\cdot526$, find the zenith distance of κ Cancrī.

[The Greenwich-circle has only one horizontal wire in the telescope, and that one is moveable.]

ix. On March 24, 1878, at noon, the sun's declination was $1^\circ 29' 5\cdot1''$, and the difference of right ascension of the sun and a star 6h. 1m. $34\cdot45s$. On September 18, 1878, at noon, the sun's declination was $1^\circ 49' 30\cdot2''$ and it was distant from the star 5h. 27m. $32\cdot97s$. in right ascension. On September 19, 1878, at noon, the sun's declination was $1^\circ 26' 12\cdot8''$ and it was distant from the star 5h. 31m. $8\cdot3s$. in right ascension. Find the right ascension of the star and that of the sun at the first observation.

x. Describe the phases of the moon, and find an expression for the phase when the positions of the sun and moon relative to the earth are known.

The moon was new on the 14th of this month at 3 h. 17 m. 5 s. P.M. Find approximately her phase and position in the heavens at 5 P.M. to-day; also state whether her eastern or western limb is illuminated, and find roughly the inclination of the line joining her horns to the horizon.

xi. Explain the causes to which the equation of time is due, and shew that it vanishes four times in the year.

Find the sidereal time at apparent noon on September 30 at Louisville (W. long. $85^\circ 30'$), having given the following from the Nautical Almanac:

SEPTEMBER, 1878.

At mean noon.

	Sun's Apparent Right Ascension.			Equation of Time to be added to mean time.	
	h.	m.	s.	m.	s.
30.	12	26	23·16.	10	0·77
31.	12	30	0·51.	10	19·98.

xii. Describe the apparent motion of an inferior planet in the course of a year; and, assuming the orbits of the earth and planet to be circles in one plane, find the elongation of the stationary points in terms of the radii of the orbits.

A planet, the radius of whose orbit is a , is stationary as seen from another the radius of whose orbit is c , and a third planet, the radius of whose orbit is $(ac)^{\frac{1}{2}}$, is in conjunction with them. Shew that, if the mean planet has the same apparent velocity when seen from either of the others, $(a - c)^2 = ac(a + c)^2$.

MATHEMATICAL TRIPOS.

PART II.

THURSDAY, *June 4*, 1885. 9 to 12.

1. FORM the equations of equilibrium of a string under the action of given forces.

A string is in equilibrium under the action of a central repulsive force. If the force diagram is a parabola, the focal radii representing tensions, find the form of the string and the law of force.

ii. Shew that any system of forces acting on a rigid body can be reduced to two, one acting along a line in any given plane and the other perpendicular to it.

Shew also (i) that the shortest distance between the lines of action of the forces cuts the central axis; (ii) if the point of intersection is fixed and the plane revolves about a line through this point perpendicular to the central axis, the lines of action generate a hyperbolic paraboloid; (iii) the minimum value of the shortest distance is twice the pitch of the resultant wrench.

iii. A light elastic string of natural length l and modulus of elasticity λ has one end fixed and a mass m hung from the other. The mass is pulled vertically down till the length of the string is $l+x$, and is let go. Find x in order that the mass may just reach the fixed end of the string.

If instead of being pulled down the mass is raised till its depth below the fixed end is $l-h$, and is then dropped, find the least value of h for which the string will break supposing its strength known, and for strings of equal length and strength shew that $h\lambda$ is constant, if m is unchanged.

4. Investigate expressions for the accelerations of a point, which is moving on a surface of revolution, in the directions of the tangent and normal to the meridian curve, and perpendicular to the plane of the meridian.

A particle moves on a smooth surface of revolution under the action of a force to the axis varying inversely as the cube of the distance from the axis. Prove that, if the particle is projected in any direction along the surface with the velocity requisite for free circular motion, its path will be a loxodrome.

If the surface is spherical, and if the particle is projected from any point at the greatest distance from the axis, prove that the time of passing over an azimuthal angle ϕ is proportional to $\tanh(\phi \cot \alpha)$, α being the angle at which the loxodrome cuts the meridians.

v. Investigate the equations of motion of a rigid body moving in two dimensions.

A curve is drawn on the convex side of a hypocycloid, parallel to it, the distance between the curves being a , and a rough circular disc of radius a rolls on the concave side of this curve under the action of a force to the centre varying as the distance. Shew that the motion is isochronous for all oscillations.

vi. A system of rigid bodies is moving under a system of conservative forces. Prove from the equations of motion that the sum of the kinetic and potential energies is constant.

A solid paraboloid of revolution is free to turn round its axis which is vertical, and has a groove cut in its surface which makes a constant angle α with the axis. A particle of mass m is placed on the groove at a depth h_0 below the vertex. Prove that when the particle has descended a depth h the angular velocity of the paraboloid is

$$2m \left[\frac{2gha \{ (h + h_0) \sin^2 \alpha - a \cos^2 \alpha \}}{\{ Mk^2 + 4ma(h + h_0) \} \{ Mk^2 + 4ma(a + h + h_0) \cos^2 \alpha \}} \right]^{\frac{1}{2}},$$

where Mk^2 is the moment of inertia of the paraboloid about the axis and $4a$ its latus rectum.

vii. A ray of light is propagated through a medium in which the refractive index is a function of the distance from a fixed point. Prove that the product of the refractive index into the perpendicular from the point on the tangent to the ray is constant.

A transparent sphere of radius a is such that the index of refraction at any point is $\mu(a/r - 1)^{\frac{1}{2}}$, where r is the distance from the centre. Prove that the path of every ray is an ellipse, and that all rays which emanate from a luminous point touch an ellipsoid of revolution.

8. Investigate the condition of stability for small angular displacements of a heavy body floating in a liquid, it being assumed that the body is symmetrical with regard to the vertical plane of displacement.

If the body is moveable about a fixed horizontal axis in the surface of a liquid of density ρ , prove that the equilibrium is stable for a small displacement if

$$gpAk^2 > gpV \cdot HN - W \cdot GL,$$

W being the weight of the body, V the volume of liquid displaced, GL , HN the vertical depths below the surface of the centres of gravity of the body and of the displaced liquid, and Ak^2 the moment of inertia, about the axis, of the area of the plane of floatation.

A solid cone, whose vertical angle 2α is less than 60° , is moveable about a smooth straight wire through its centre of gravity perpendicular to its axis. If the wire is held in the surface of a liquid, prove that the cone will be in a position of stable equilibrium when its axis is inclined to the horizon at the angle $\sin^{-1}(2 \sin \alpha)$.

9. A vessel, constructed of thin flexible and inextensible material, in the form of a surface of revolution, is exposed to fluid pressure, which is the same at all points of the same circular section; investigate equations for determining the principal tensions at any point.

If t and t' are the principal tensions at a point of a circular section of radius r , prove that

$$t' = \frac{d}{dr}(tr).$$

If the shape of the surface is that formed by the revolution of a catenary, of which c is the parameter, about its axis, and if t , t' are the principal tensions at the distance x from the axis, prove that

$$2t - t' : 2t :: x/c : \sinh 2x/c,$$

the difference of the pressures inside and outside being supposed constant.

10. Explain the general principles of the construction of a Sun Dial, and shew how to graduate a vertical South Dial.

Taking the dial-plate to be circular, and supposing that the style has fallen off, and has been reinserted in the right direction, but at a slight distance, $1/n$ th of the radius of the plate, from the centre of the plate, in the horizontal radius, prove that the consequent error in the time indicated will be, if h is the hour angle and l the latitude,

$$\cos h \{1 - \sin^2 h \sin^2 l\}^{\frac{1}{2}} / n \cos l.$$

If the style is a thin iron spike, driven into the wall at random, how would you graduate the wall?

THURSDAY, June 4, 1885. 2 to 5.

1. PROVE that

$$a_1 + \frac{b_1}{a_2 + a_3 + \dots + a_n} = K \left(\begin{matrix} b_1 & b_2 & \dots & b_{n-1} \\ a_1 & a_2 & \dots & a_n \end{matrix} \right) / K \left(\begin{matrix} b_2 & b_3 & \dots & b_{n-1} \\ a_2 & a_3 & \dots & a_n \end{matrix} \right),$$

$$\text{where } K \left(\begin{matrix} b_1 & b_2 & \dots & b_{n-1} \\ a_1 & a_2 & \dots & a_n \end{matrix} \right) = \begin{vmatrix} a_1 & b_1 & 0 & 0 & \dots & 0 \\ -1 & a_2 & b_2 & 0 & \dots & 0 \\ 0 & -1 & a_3 & b_3 & & \\ & & & & & a_{n-1} & b_{n-1} \\ 0 & & & & & -1 & a_n \end{vmatrix}.$$

$$\text{If } x = \frac{1}{a_1 + a_2 + \dots + a_{n-1} + a_n + x} \quad y = \frac{1}{a_{n-1} + a_{n-2} + \dots + a_1 + a_n + y},$$

prove that

$$q'_n - q_n = p_{n-1} - p'_{n-1} = (x - y)q_{n-1},$$

where

$$\frac{p_n}{q_n} = \frac{1}{a_1 + a_2 + \dots + a_{n-1} + a_n}, \quad \frac{p_{n-1}}{q_{n-1}} = \frac{1}{a_1 + a_2 + \dots + a_{n-1}},$$

and accented letters denote what these become when the order of a_1, a_2, \dots, a_{n-1} is reversed.

2. Shew that the roots of the equation $(1+x)^n = (1-x)^n$ are the values of $\tan r\pi/n$, where r has all integral values from 0 to $n-1$.

If P_r denotes the sum of the products, taken s together, of the quantities

$$\tan^2 \pi/(2n+1), \tan^2 2\pi/(2n+1), \dots, \tan^2 n\pi/(2n+1),$$

$\tan^2 r\pi/(2n+1)$ being omitted, and if

$$A_r = (-1)^{r-1} \sin^2 r\pi/(2n+1) \cos^{n-r} r\pi/(2n+1),$$

prove that

$$\sum A_r P_r = 0,$$

the summation extending to all values of r from 1 to n and s having any value from 1 to n .

iii. Find the envelope of the line $lx + my = 1$, when the parameters are connected by the equation

$$al^2 + 2hlm + bm^2 + 2gl + 2fm + c = 0.$$

From E , the centre of curvature at any point P of an ellipse, two other normals, EQ , ER , are drawn. Prove that the locus of the point of intersection of QR with the normal at P is an ellipse, and that the line QR always touches the curve

$$(x/a)^{\frac{2}{3}} + (y/b)^{\frac{2}{3}} = 1.$$

4. Shew that two rectilinear generators can be drawn through any point of a hyperboloid of one sheet.

Shew that the perpendicular from the centre on the tangent plane at any point of the hyperboloid $(x^2 + y^2)/a^2 - z^2/c^2 = 1$ is $ac/(c^2 + r^2)^{\frac{1}{2}}$, where r is the length of a generator through the point cut off by the plane of xy .

v. Shew that, if any particular solution P_1 of the equation

$$\frac{dP}{dx} - P^2 = \phi(x)$$

is known, an integral of the equation

$$\frac{d^2 v}{dx^2} + v\phi(x) = 0$$

is given by

$$\frac{dz}{dx} + 2P_1 z = A,$$

where

$$\log(v/z) = \int P_1 dx.$$

Hence solve

$$(2x+1)^2 (x^2+x+1) \frac{d^2 v}{dx^2} = 18v.$$

vi. Prove that the equation to the catenary in which the line density is proportional to the tension is of the form

$$y = c \log \sec x/c,$$

and that this line density is proportional to $\cosh s/c$, where s is the length of the arc measured from the lowest point.

Prove that the roulette of the pole of the curve $r^{1/m} \cos \theta/m = a^{1/m}$ rolling on a horizontal line is a catenary in which the line density is proportional to the $(2-m)^{\text{th}}$ power of the tension.

vii. A particle is moving under the action of a central force P together with a transverse force T . Shew that the differential equation of the path is

$$\left(\frac{d^2u}{d\theta^2} + u\right) u^2 \int \frac{2T}{u^3} d\theta = P - \frac{T}{u} \frac{du}{d\theta}.$$

Two particles P and Q are connected by a smooth string which passes through a fine hole in an inclined plane (inclination α). Q (mass m) hangs vertically and P (mass m) moves on the inclined plane. Shew that the differential equation of P 's path is

$$2 \frac{\sin \theta \sin \alpha}{u^3} + \frac{d}{d\theta} \left(\frac{\frac{m'}{m} - \sin \alpha \cos \theta + \sin \alpha \sin \theta \left(1 + \frac{m}{m'}\right) \frac{du}{d\theta}}{u^2 \left(1 + \frac{m}{m'}\right) \frac{d^2u}{d\theta^2} + u^3} \right) = 0.$$

8. A mass of fluid is at rest under a system of conservative forces. Shew that the surfaces of equal potential, of equal pressure and of equal density all coincide, and that if the fluid is homogeneous

$$p/\rho = C - V,$$

where p is the pressure, ρ the density, V the potential at any point and C a constant.

The space between two perfectly flexible spherical membranes is filled with liquid at rest under the action of two central forces, both varying inversely as the distance, equal at equal distances, the one attractive, the other repulsive; and the space within the inside surface is filled with compressed air. Find the positions of the centres of force, and shew that all the surfaces of equal pressure are spheres.

ix. Explain how the longitude may be found at sea by means of "lunar distances," and give the formula for "clearing the distance."

If the longitude is calculated from the observed lunar distance, without clearing it, prove that the error in longitude in degrees will be

$$45 \left\{ \frac{\delta' \sin a - \sin a' \cos d}{\sin d \cos a'} + \frac{\delta \sin a' - \sin a \cos d}{\sin d \cos a'} \right\},$$

where a and a' are the altitudes of the star and moon, δ and δ' the corrections to be applied to the observed altitudes to get the true altitudes, d the observed lunar distance, and h the change in the lunar distance for three hours as given in the Nautical Almanac.

10. Prove that the potential of a body attracting according to the law of nature, at a point whose distance (r) from the centre of mass is large compared with the dimensions of the body, is

$$M/r + (A + B + C - 3I)/2r^3$$

approximately, where M is the mass, and A, B, C, I the moments of inertia of the attracting mass round the principal axes at the centre of gravity, and round the line joining this point to the attracted point.

Two homogeneous hemispheres, masses M, M' , radii a, b , are placed with their centres at a distance c , great compared with a or b , the flat sides facing and perpendicular to the line joining their centres. Prove that the mutual potential energy is

$$\frac{MM'}{c} \left\{ 1 - \frac{3(a+b)}{8c} + \frac{9}{32} \frac{ab}{c^2} \right\}$$

approximately.

FRIDAY, June 5, 1885. 9 to 12.

1. ANY two diameters of an ellipse at right angles to each other meet the tangent at a fixed point P in Q and R . Prove that the other two tangents through Q and R intersect on a fixed straight line which is parallel to the common chord of the ellipse and its circle of curvature at P .

ii. ABC is a triangle and the perpendiculars from A, B, C on the opposite sides meet them in L, M, N respectively. Three conics are described; one touching BM, CN at M, N and passing through A ; a second touching CN, AL at N, L and passing through B ; a third touching AL, BM at L, M and passing through C . Prove that at A, B, C they all touch the same conic.

3. Prove that, if α lies between $-\pi/4$ and $+\pi/4$,

$$\int_0^\pi \frac{d\theta}{1 - 2 \sin 2\alpha \cos \theta + \cos^2 \theta} = \frac{\pi \cos \alpha}{\sqrt{2 \cos^2 2\alpha}}.$$

iv. A circle of radius ma touches internally one of radius a . Circles are described to touch the inner circle externally and the outer circle internally, firstly at equal arc-distances along the inner circle, and secondly at equal arc-distances along the outer circle. Prove that the mean area of the second series of circles exceeds that of the first series by $\pi a^2 (1-m)(1-\sqrt{m})^2$.

5. Prove that the centres of all the circles which pass through the pole of a limaçon ($r = a + b \cos \theta$), and touch the curve, lie on a fixed circle; and that, if the centres of two of these circles subtend a right angle at the pole, the other point of intersection of the circles lies on another fixed circle.

vi. If on a sphere of radius a a curve S is drawn such that its radius of circular curvature at an arc-distance s from the origin is $a \cos \beta s$, prove that its tortuosity is constant and equal to β . Also if S' is the locus of centres of circular curvature of S , prove that the radius of circular curvature at the point of S' corresponding to the origin of S is $a/2$.

7. A fixed oval curve on a smooth horizontal plane is surrounded by a smooth endless string, and a particle is projected inside the string so as to move round keeping the string stretched. If t and t' are the lengths of the straight portions of the string at any time; ϕ, ϕ' the inclinations of these lengths to a fixed line; and ρ, ρ' the radii of curvature at the points of contact: prove that

$$t' \frac{dt}{d\phi} + t \frac{dt'}{d\phi} = \rho't - \rho t'.$$

Prove also that the tension of the string is proportional to $1/t + 1/t'$.

viii. A circular wire ring just fits round a right circular cylinder. If the cylinder is deformed so that each cross-section becomes an ellipse with semiaxes a and b and with the same perimeter as the original circular cross-section, prove that the pressure of the ring on the cylinder at each end of the major axis of its cross-section becomes

$$\frac{K}{2a^2b^2} (a^2 - b^2) (5a^4 - a^2b^2 + 5b^4),$$

where the bending moment before deformation was $K \div$ the radius of the cylinder.

Also find the tension at any point of the ring.

ix. If the six points on a quadric, normals at which meet in a point, are joined in pairs by three lines, prove that whatever set of joining lines is taken the sum of the squares of the three diameters parallel to them is the same.

x. Two screws have the same pitch ω , their spin-velocities being α, β ; and c is the shortest distance between their axes, ω being the angle between them. Prove that, for all possible variations of α, β, ω consistent with $\alpha\beta \sin \omega$ remaining constant, the smallest possible value of the resultant translation-velocity is $2 \{c\omega\alpha\beta \sin \omega\}^{\frac{1}{2}}$.

11. Find the class of plane curves such that, if from a fixed point in the plane perpendiculars are let fall upon the tangent and normal at any point of any one of the curves, the straight line joining the feet of the perpendiculars will pass through another fixed point.

12. Find the differential equations of the orthogonal trajectories of the generating lines of a hyperboloid of one sheet, and prove that, if the surface is $(x/a)^2 + (y/b)^2 - (z/c)^2 = 1$, one of the differential equations which can be obtained is

$$a^2 dx^2 + b^2 dy^2 - c^2 dz^2 = (x dx + y dy + z dz)^2.$$

If $a = b$, prove that the projection of the trajectories on the plane xy is given by

$$a^2 (a \pm \theta) = (a^2 + c^2) (r^2 - a^2)^{\frac{1}{2}} + a^2 \sin^{-1} a/r.$$

xiii. A very thin shell of mass M is bounded by the surface $x^2/a^2 + y^2/a^2 + z^2/c^2 = 1$ and a similar and similarly situated surface. Prove that, by virtue of the mutual attraction of its particles, the half-shell on one side of the plane xy presses the half-shell on the other side with a resultant force

$$\frac{M^2}{4(a^2 - c^2)} \log \frac{a}{c}.$$

xiv. A rough circular cylinder of radius c is fixed with its axis vertical on a smooth horizontal plane. A string passes round the cylinder for a length $c\beta$, its two end-portions of lengths a, b respectively being straight and lying on the plane. The free end of the length a is then acted upon by a constant force F in the direction of its length. Prove that, when the free end of the length b reaches the cylinder, it will be moving with a velocity

$$\left\{ \frac{F^2}{2m(e^{\mu\beta} - 1)} \cdot \frac{l^2 - (l-b)^2}{(l-b)^4} \right\}^{\frac{1}{2}}, \text{ where } l \equiv \frac{c}{\mu} + \frac{a + b e^{\mu\beta}}{e^{\mu\beta} - 1},$$

μ being the coefficient of friction, and m the mass of unit length of the string.

15. A closed hollow right circular cone, standing on its flat base on a horizontal plane, is just filled with a liquid, the density of which varies as the depth. The vessel is then inverted and held with its axis vertical and its vertex on the horizontal plane.

Prove that the resultant pressure on the curved surface is unchanged in magnitude, and that the potential energy of the liquid is changed in the ratio

$$2 \{\Gamma(\frac{1}{3})\}^2 : 3 \Gamma(\frac{2}{3}).$$

it being assumed that the potential energy is zero when the liquid is let out on the plane.

16. The corners A, B of a heavy rectangular lamina $ABCD$ are moveable on two smooth fixed wires OA, OB , at right angles to each other in a vertical plane, and equally inclined to the vertical. The lamina being in a position of equilibrium with AB horizontal, find the velocity of the centre of gravity and the angular velocity produced by an impulse applied along the lowest edge CD .

Having given that $AB = 2a, BC = 4a$, prove that AB will just rise to coincidence with a wire, if the impulse is such as would impart to a mass equal to that of the lamina the velocity whose square is $\frac{2}{3}ga(2 - \sqrt{2})$.

Also find the impulsive stresses at A and B .

17. A rigid body moves about a fixed point under the action of a couple producing motion such that the kinetic energy is proportional to the square of the angular momentum. Prove that the plane containing the axis of resultant angular momentum and the axis of the couple is at right angles to the plane containing the former axis and the instantaneous axis.

If the square of the angular momentum is equal to $2B \times$ the kinetic energy, prove that the first mentioned plane is fixed in the body, and coincides with one or other of the planes whose equations referred to the principal axes are

$$x\sqrt{C(A-B)} = \pm z\sqrt{A(B-C)}.$$

18. A heavy rigid body is spitted on a smooth circularly-cylindrical rod, on which it can slide, and which passes through its centre of gravity, and the rod is made to rotate uniformly with angular velocity ω in a right circular cone, semi-vertical angle α , about a vertical axis. If C is the moment of inertia about the rod, A and B about two lines fixed in the body perpendicular to the rod, one of which is inclined at an angle ϕ to the plane through the vertical axis and the rod, and if D, E, F are the products of inertia; prove that

$$C\ddot{\phi} = \omega^2 \sin^2 \alpha \{(B-A) \sin \phi \cos \phi + F \cos 2\phi\} - \omega^2 \sin \alpha \cos \alpha (E \sin \phi + D \cos \phi).$$

FRIDAY, June 5, 1885. 2 to 5.

1. INVESTIGATE Cardan's solution of a cubic equation, explaining fully the case when all the roots are real.

Express the roots of the equation

$$x^3 + ax^2 + x = a,$$

and find (correct to 3 places of decimals) one of the roots when $a = 3.330190...$

ii. Enunciate and prove de Moivre's theorem for any value of the index.

If the functions ϕ and ψ are defined by the equations

$$\phi(x+y) = \phi(x)\phi(y) - \psi(x)\psi(y),$$

$$\psi(x+y) = \phi(x)\psi(y) + \phi(y)\psi(x),$$

shew that

$$\{\phi(x)^2 + \psi(x)^2\}^{\frac{1}{2}} = \{\phi(y)^2 + \psi(y)^2\}^{\frac{1}{2}}.$$

iii. In a spherical triangle prove that the sines of the sides are proportional to the sines of the opposite angles, and express $\sin A/\sin a$ in terms of the sides.

If the sides AB, AC are produced to B' and C' such that $BB' = AB, CC' = AC$, prove that

$$\cos B'C' - \cos 2a = 8 \sin s \sin (s-a) \sin (s-b) \sin (s-c).$$

4. If the conic

$$(uvwu'v'w'xyz)^2 = 0$$

is a circle of radius ρ , prove that

$$\frac{1}{a^2} \frac{\partial K}{\partial u} = \frac{1}{b^2} \frac{\partial K}{\partial v} = \frac{1}{c^2} \frac{\partial K}{\partial w} = -\frac{1}{\rho^2} \frac{H}{K},$$

where

$$H \equiv \begin{vmatrix} u & w' & v' \\ w' & v & u' \\ v' & u' & w \end{vmatrix}, \quad K \equiv \begin{vmatrix} u & w' & v' & 1 \\ w' & v & u' & 1 \\ v' & u' & w & 1 \\ 1 & 1 & 1 & 0 \end{vmatrix}.$$

Prove that the equation of the director-circle of any conic

$$(uvwu'v'w'xyz)^2 = 0$$

is $\{x(Wb^2 + Vc^2 + U'bc \cos A) + y(Uc^2 + Wa^2 + V'ca \cos B) + z(Va^2 + Ub^2 + W'ab \cos C)\} \{x+y+z\} + K\{a^2yz + b^2zx + c^2xy\} = 0$,

where $U \equiv \frac{\partial H}{\partial u}$, etc.: and, if the conic is a parabola, find the coordinates of its focus.

v. Prove that two circles can in general be drawn through a given point having double contact with the ellipse $x^2/a^2 + y^2/b^2 = 1$; and that, if the chords of contact are parallel to the axis of y , the equation of the circles in elliptic coordinates is

$$\cos^{-1} \mu/a \pm \cos^{-1} \nu/a = \kappa.$$

If a common tangent of two such circles is always parallel to a fixed direction, prove that the locus of intersection of these circles is a hyperbola confocal with the ellipse.

vi. Define a centre of a surface, and prove that surfaces of the second degree have in general a centre.

How many conditions must be satisfied by the coefficients of a surface of the n^{th} degree that it may have a centre?

Prove that if a straight line cuts the surface

$$x^2 + y^2 + z^2 = 1$$

in three real points, the centre of gravity of the three points must, if it lies on any axis of coordinates, be at the origin.

7. Distinguish between the circular curvature and tortuosity of a curve. Prove the formula $\frac{1}{\rho^2} = \left(\frac{d^2x}{ds^2}\right)^2 + \left(\frac{d^2y}{ds^2}\right)^2$ for a plane curve, and the corresponding formula for a tortuous curve.

If a curve is drawn on a cylinder, whose axis is vertical and whose horizontal cross-sections are ellipses with semiaxes a , b ; and if at a point P whose eccentric angle in its cross-section is ϕ the tangent to the curve makes an angle ψ with the vertical, prove that the radius (ρ) of circular curvature of the curve at P is given by

$$\frac{a^2 \sin^2 \phi + b^2 \cos^2 \phi}{\rho^2 \sin^2 \psi} = \left(\frac{d\psi}{d\phi}\right)^2 + \frac{a^2 b^2 \sin^2 \psi}{(a^2 \sin^2 \phi + b^2 \cos^2 \phi)^2}.$$

8. Shew how to differentiate a definite integral with respect to any constant it may contain: and find the value of $\int_0^{\pi/2} \frac{dx}{(a + b \cos x)^n}$, where n is integral.

Find the values of the following integrals:

$$\int (x + a \log x)^2 dx, \quad \int \frac{(a+x) dx}{x^2 + ax \log x}, \quad \int \frac{(1 - \log x) dx}{(x + a \log x)^2}.$$

9. Given a particular integral of a linear differential equation of the second order, shew how to find the general solution.

Solve the equations:

$$(i) \quad x \frac{d^2 y}{dx^2} - \frac{dy}{dx} - 4a^2 x^2 y = 4x^3 (1 + x^2),$$

$$(ii) \quad x(x^2 - 1) \frac{d^2 y}{dx^2} + (3x^2 - 2) \frac{dy}{dx} - 3xy = 0.$$

SATURDAY, June 6, 1885. 9 to 12.

1. PROVE that the eliminant of two equations of the m^{th} and n^{th} degrees is of the $m+n^{\text{th}}$ degree in their coefficients.

If $x^m + b_1x^{m-1} + b_2x^{m-2} + \dots$ is divided by $x^n + a_1x^{n-1} + a_2x^{n-2} + \dots$, prove that the coefficient of the r^{th} term of the quotient is the determinant

$$(-1)^{r-1} \begin{vmatrix} 1 & 1 & 0 & 0 & 0 & 0 & \dots \\ b_1 & a_1 & 1 & 0 & 0 & 0 & \dots \\ b_2 & a_2 & a_1 & 1 & 0 & 0 & \dots \\ b_3 & a_3 & a_2 & a_1 & 1 & 0 & \dots \\ \vdots & \vdots & \vdots & \vdots & \dots & \dots & \dots \\ b_{r-1} & a_{r-1} & a_{r-2} & \dots & \dots & \dots & \dots \end{vmatrix},$$

and that after any number of terms of the quotient have been found the coefficients of the remainder can be expressed as determinants of a similar form.

ii. Shew how to find the sums of the powers of the roots of a rational algebraic equation in terms of the coefficients, and also how to obtain the coefficients in terms of the sums of the powers of the roots.

If s_r is the sum of the r^{th} powers of the roots of the equation

$$x^n + p_1x^{n-1} + \dots + p_n = 0,$$

and if F is any function of the coefficients, prove that

$$r \frac{dF}{ds_r} + \frac{dF}{dp_r} + p_1 \frac{dF}{dp_{r+1}} + p_2 \frac{dF}{dp_{r+2}} + \dots + p_{n-r} \frac{dF}{dp_n} = 0.$$

Prove that the value of the symmetric function, $\Sigma(\alpha^3\beta\gamma)$, of the roots of the equation is

$$p_1p_4 + 2p_2p_3 - p_1^3p_5 - 5p_5.$$

iii. Tangents are drawn from a fixed point to a system of coaxial circles; prove that the locus of the points of contact is a cubic curve and trace the curve.

Prove that if from a fixed point tangents are drawn to a system of conics circumscribing a given quadrilateral, the locus of the points of contact is a cubic passing through the fixed point and the vertices of the quadrilateral.

Prove also that the tangents to a system of conics, inscribed in a given quadrilateral, at the points where a fixed straight line meets them, envelope a curve of the third class, touching the given line and the sides of the given quadrilateral.

4. If the equations of two curves are given in rectangular co-ordinates, shew how to find the points on the first curve the normals at which will touch the second, and determine how many such points there are.

If ABC is a tangent to the rectangular hyperbola

$$x^2 - y^2 = a^2$$

at the point A , and if it meets the lemniscate

$$r^2 = a^2 \cos 2\theta$$

in B and C , prove that the circle of curvature of the lemniscate at B passes through C .

5. Prove that quadrics have in general two systems of circular sections, and that any two circles of opposite systems lie on the same sphere.

What class of quadrics have no circular sections and what class have only one?

If c is greater than a find the directions of the circular sections of the surface

$$c^2(yz + zx) + a^2xy = a^2c^2,$$

and if c is less than a , prove that the circular sections are parallel to the planes

$$4c^2z + (x + y)(a^2 + \sqrt{8c^4 + a^4}) = \pm \sqrt{2}(x - y)\{a^4 - 4c^4 + a^2\sqrt{8c^4 + a^4}\}^{\frac{1}{2}}.$$

6. If A is the vertex, O the centre and P any point on the hyperbola

$$x^2/a^2 - y^2/b^2 = 1,$$

prove that

$$x = a \cosh \frac{2S}{ab}, \quad y = b \sinh \frac{2S}{ab},$$

where S is the sectorial area AOP .

Prove that

$$\int_0^u \frac{du}{(e \cosh u - 1)^n} = \frac{1}{(e^2 - 1)^{n-1}} \int_0^\theta (e \cos \theta + 1)^{n-1} d\theta,$$

if

$$(e \cos \theta + 1)(e \cosh u - 1) = e^2 - 1.$$

vii. Amsler's Planimeter consists of two rods, AB , BC , jointed at B and capable of free motion in a plane round the end A which is fixed, with a small wheel, the plane of which is perpendicular to BC , capable of turning round BC as an axis.

If the end C is made to move so that its projection on a parallel plane, on which the wheel rolls, is the contour of a closed curve, and if the end A is outside the curve, prove that the area of the curve is the product of BC by the length of the arc traversed by the wheel.

If $AB = a$, $BC = b$, and if c is the distance of the wheel from B , and s the arc traversed by the wheel, prove that, when A is inside the curve, the expression for the area is

$$\pi(a^2 + b^2 - 2bc) + bs.$$

viii. Find the primitive of the equation

$$24x \frac{dy}{dx} = y \left\{ 27 \left(\frac{dy}{dx} \right)^2 + 16 \right\};$$

form the c -discriminant and the p -discriminant, and interpret the results.

Find a complete primitive, and the singular solution of the equation,

$$3z^2 \left\{ \left(\frac{dz}{dx} \right)^2 + \left(\frac{dz}{dy} \right)^2 \right\} + 4xz^2 = 2z \left(x \frac{dz}{dx} + y \frac{dz}{dy} \right) + x^2 + y^2.$$

ix. Shew how to form the functional equation of the surfaces which can be generated by a set of curves, the equations of which contain $n+1$ parameters, it being given that the curves are subject to n restrictive conditions.

Prove that the differential equation of the surfaces generated by the curves of intersection of circular cylinders, about the axis of z , with spheres having their centres on the axis of z , is

$$yz \left(y^2 \frac{d^2 z}{dx^2} - 2xy \frac{d^2 z}{dx dy} + x^2 \frac{d^2 z}{dy^2} \right) + y \left(y \frac{dz}{dx} - x \frac{dz}{dy} \right)^2 = z(x^2 + y^2) \frac{dz}{dy}.$$

If the spheres all touch the axis of z , and if α is the radius of a cylinder and β the radius of a sphere, prove that the specific curvature at a point on the plane xz of the surface generated is given by the expression

$$\frac{\left(\frac{d\beta}{d\alpha} - 1 \right) \left\{ (2\alpha^2\beta - \alpha^2) \frac{d^2\beta}{d\alpha^2} - \alpha^2 \left(\frac{d\beta}{d\alpha} \right)^2 + 2\alpha\beta \frac{d\beta}{d\alpha} - \beta^2 \right\}}{\left\{ \left(\beta + \alpha \frac{d\beta}{d\alpha} \right)^2 - 2\alpha^2 \frac{d\beta}{d\alpha} \right\}^{\frac{1}{2}}}.$$

SATURDAY, June 6, 1885. 2 to 5.

1. FIND the equations of equilibrium of a string resting upon a smooth surface under the action of any forces.

A heavy string is confined within a smooth helical tube with horizontal axis. Prove that at the point whose axial radius-vector makes an angle θ with the vertical measured upwards, the angle (ϕ) between this radius-vector and the direction of resultant pressure on the string is

$$\cot^{-1} \{(1 + \cos^2 \alpha) \operatorname{cosec} \alpha \cot \theta + k \operatorname{cosec} \theta\},$$

where α is the pitch of the helix and k a constant depending on the length of the string.

If both ends of the string are free and upon the lowest generator, prove that

$$k = \cos \alpha \cot \alpha.$$

2. Find the potential of an uniform distribution of matter over a spherical surface (i) at an internal, (ii) at an external point.

If in the midst of attracting bodies a spherical surface is described which encloses none of the masses, prove that the mean potential over its surface is equal to the potential at its centre.

Matter is distributed in a cone so that its density at a distance r from the vertex is proportional to $\frac{1}{r^2} \frac{d}{dr} \left\{ r^2 \frac{df(r)}{dr} \right\}$. Prove that the difference between the mean potentials over two spherical surfaces whose centres are at the vertex of the cone and whose radii are a, b is proportional to $f(b) - f(a)$.

iii. A particle constrained to move on a smooth wire is at rest under the action of a central force which varies as a given function of the distance. Find the time of a small oscillation about the position of equilibrium.

A fine elliptic tube is constrained to rotate with given angular velocity (ω) round its major axis which is vertical. A fine chain whose length is equal to a quadrant of the ellipse is placed inside. Shew that if $\omega^2 = 4g/l$, where l is the latus rectum of the ellipse, the string will be in stable equilibrium when one end is at the lowest point, and if the string is disturbed find the time of an oscillation.

4. If a system of bodies is in equilibrium and one of the supports suddenly gives way, shew how to find the initial values of the reactions of the system.

Into the top of a smooth fixed sphere of radius a is fitted a small smooth vertical rod. A uniform bar of length $2b$ has a small light ring at its upper end which can slide along the rod, and the bar rests upon the sphere, so that in its position of equilibrium the centre of gravity is at a distance c from the point of contact with the sphere. If the ring suddenly gives way, prove that the pressure on the sphere is instantaneously diminished in the ratio $b(b-c) : b^2 + 3c^2$.

5. A body is rotating about a fixed point. Shew that the moments of the effective forces about axes through the fixed point moving in any manner are $h_1 - h_2\theta_3 + h_3\theta_2$ and two similar expressions, where $\theta_1, \theta_2, \theta_3$ are the angular velocities of the axes about themselves, and h_1, h_2, h_3 the components of the momentum about the axes.

A ring of wire of radius c rests on the top of a smooth fixed sphere of radius a , and is set rotating about the vertical diameter of the sphere. If the ring is slightly displaced, prove that the motion is unstable if the angular velocity is less than

$$\left\{2g \frac{2a^2 - c^2}{c^4} \sqrt{(a^2 - c^2)}\right\}^{\frac{1}{2}}.$$

Examine the stability of the motion in the case in which the angular velocity has this critical value.

vi. A mass of uniform liquid, attracting according to the law of nature, is rotating in relative equilibrium with uniform angular velocity. Shew that there are two oblate spheroids of revolution either of which may be the free surface.

Shew also that any given mass of the liquid may be annihilated without disturbing the equilibrium of the rest, provided the annihilated mass is bounded by the external surface and either of two other spheroids, but that a similar theorem does not in general hold for other laws of attraction.

vii. A pencil of light is reflected or refracted at any number of surfaces in any manner. Shew that, if when the pencil is in any one medium the rays can be cut orthogonally by a surface, they can always be so cut.

A cylindrical pencil of light falls on the convex surface of a transparent paraboloid of revolution, the direction of the light being parallel to the axis. Shew that if ϕ and ϕ' are the angles of incidence and refraction of the ray which meets the axis at a point O , the density of the rays at O is proportional to

$$\tan \phi / (\tan \phi + \tan \phi').$$

Shew also that after refraction the rays are all orthogonal to a system of surfaces of revolution, the equation of the generating curve being found by eliminating ϕ from the equations

$$\begin{aligned} x &= a \tan^2 \phi + (c - a \tan^2 \phi) \{ \cos \phi (\mu^2 - \sin^2 \phi)^{\frac{1}{2}} + \sin^2 \phi \} / \mu^2, \\ y &= 2a \tan \phi - (c - a \tan^2 \phi) \{ (\mu^2 - \sin^2 \phi)^{\frac{1}{2}} - \cos \phi \} \sin \phi / \mu^2, \end{aligned}$$

where $4a$ is the latus rectum of the paraboloid, c a constant, and μ the index of refraction.

viii. Prove that the condition of achromatism for a pencil directly refracted through two thin lenses in contact on the same axis is

$$\frac{\omega_1}{f_1} + \frac{\omega_2}{f_2} = 0,$$

where ω_1, ω_2 are the dispersive powers and f_1, f_2 the focal lengths of the lenses.

Prove that the same condition holds if the thicknesses of the lenses and the distance between them are taken into account provided ω_1 and ω_2 are so small that the product of either of them into the distance between the extreme surfaces of the lenses may be neglected. In this case explain clearly how the focal lengths are measured.

9. Describe Bessel's method for determining by observation the annual parallax of a star.

If Π is the coefficient of annual parallax of a star whose latitude λ is equal to its right ascension, prove that the parallax in declination varies between the limits $\pm \Pi (1 - \cos^2 \omega \cos^2 \lambda)^{\frac{1}{2}}$, ω being the obliquity of the ecliptic.

GENERAL EXAMINATION FOR THE ORDINARY B.A. DEGREE.

MONDAY, June 1, 1885. 9—12.

ACTS OF THE APOSTLES.

(A)

1. FOR what reasons, apart from tradition, is St Luke believed to be the author of this book? Can it have been written by (a) Barnabas, or (b) Timothy?

2. Write a list of the discourses of St Peter recorded in the first twelve chapters, stating the circumstances in which each was spoken. Give a brief summary of the contents of *one* of these discourses.

3. Σαῦλος δὲ ὁ καὶ Παῦλος. In what connexion do these words occur? What is known of his life before his conversion?

4. ἀπέχεσθαι εἰδωλοθύτων καὶ αἵματος καὶ πνικτῶν. To whom, and for what reasons, was this injunction given? What is meant by εἰδωλόθυτα?

5. Give a brief account of St Paul's missionary journeys in Asia Minor.

6. Translate the following passages, stating in what connexion each occurs:

(a) μετανοήσατε οὖν καὶ ἐπιστρέψατε εἰς τὸ ἐξαλειφθῆναι ὑμῶν τὰς ἁμαρτίας, ὅπως ἂν ἔλθωσι καιροὶ ἀναψύξεως ἀπὸ προσώπου τοῦ Κυρίου, καὶ ἀποστείλῃ τὸν προκεχειρισμένον ὑμῖν Χριστὸν Ἰησοῦν· ὃν δεῖ οὐρανὸν μὲν δέξασθαι ἄχρι χρόνων ἀποκαταστάσεως πάντων ὧν ἐλάλησεν ὁ Θεὸς διὰ στόματος τῶν ἁγίων ἀπ' αἰῶνος αὐτοῦ προφητῶν.

(b) προσεῖχόν τε οἱ ὄχλοι τοῖς λεγομένοις ὑπὸ τοῦ Φιλίππου ὁμοθυμαδόν, ἐν τῷ ἀκούειν αὐτοὺς καὶ βλέπειν τὰ σημεῖα ἃ ἐποίει. πολλοὶ γὰρ τῶν ἐχόντων πνεύματα ἀκάθαρτα, βοῶντα μεγάλη φωνὴ ἐξήρχετο.

Explain the construction of βοῶντα.

(c) ἀρξάμενος δὲ ὁ Πέτρος ἐξετίθετο αὐτοῖς καθεξῆς, λέγων, Ἐγὼ ἤμην ἐν πόλει Ἰόππῃ προσευχόμενος, καὶ εἶδον ἐν ἑκστάσει ὄραμα, καταβαῖνον σκευὴς τι ὡς ὀθόνην μεγάλην, τέσσαρσιν ἀρχαῖς καθιεμένην ἐκ τοῦ οὐρανοῦ, καὶ ἦλθεν ἄχρῃς ἐμοῦ· εἰς ἣν ἀτενίσας κατενόουν, καὶ εἶδον τὰ τετράποδα τῆς γῆς καὶ τὰ θηρία καὶ τὰ ἐρπετὰ καὶ τὰ πετεινὰ τοῦ οὐρανοῦ.

Give the derivation of ἑκστασις, ἀτενίσας.

(d) ὃ τε ἱερεὺς τοῦ Διὸς τοῦ ὄντος πρὸ τῆς πόλεως, ταύρους καὶ στέμματα ἐπὶ τοὺς πυλῶνας ἐνέγκας, σὺν τοῖς ὄχλοις ἤθελε θύειν.

What is meant by τοῦ ὄντος πρὸ τῆς πόλεως?

(e) ἐποίησέ τε ἐξ ἑνὸς πᾶν ἔθνος ἀνθρώπων κατοικεῖν ἐπὶ παντὸς προσώπου τῆς γῆς, ὁρίσας προστεταγμένους καιροὺς καὶ τὰς ὁροθεσίας τῆς κατοικίας αὐτῶν· ζητεῖν τὸν Θεόν, εἰ ἄρα γε ψηλαφήσειαν αὐτὸν καὶ εὗροιεν, καί γε οὐ μακρὰν ἀπὸ ἑνὸς ἐκάστου ἡμῶν ὑπάρχοντα. ἐν αὐτῷ γὰρ ζῶμεν καὶ κινούμεθα καὶ ἐσμεν· ὥς καὶ τινες τῶν καθ' ὑμᾶς ποιητῶν εἰρήκασι, Τοῦ γὰρ καὶ γένος ἐσμέν.

From whom is the last sentence quoted?

(f) εὐρόντες γὰρ τὸν ἄνδρα τοῦτον λοιμόν, καὶ κινούντα στάσεις πᾶσι τοῖς Ἰουδαίοις τοῖς κατὰ τὴν οἰκουμένην, πρωτοστάτην τε τῆς τῶν Ναζωραίων αἱρέσεως· ὃς καὶ τὸ ἱερόν ἐπέειρε βεβηλῶσαι· ὃν καὶ ἐκρατήσαμεν· παρ' οὗ δυνήσῃ, αὐτὸς ἀνακρίνας, περὶ πάντων τούτων ἐπιγινῶναι ὧν ἡμεῖς κατηγοροῦμεν αὐτοῦ.

Distinguish between the meanings of γινώσκω, ἀναγινώσκω, ἐπιγινώσκω.

(g) καὶ τὰς ἀγκύρας περιελόντες εἷον εἰς τὴν θάλασσαν, ἅμα ἀνέντες τὰς ζευκτηρίας τῶν πηδαλίων· καὶ ἐπάραντες τὸν ἀρτέμονα τῇ πνεύσῃ κατεῖχον εἰς τὸν αἰγιαλόν.

Explain the nature of the operations referred to.

7. In what senses are the following words and phrases employed?

ἀνθύπατος, ἀστεῖος τῷ Θεῷ, ἀφελότης καρδίας, ἐγκαλείτωσαν ἀλλήλοις, Ἑλληνιστής, ἐκ σπείρης τῆς καλουμένης Ἰταλικῆς, νεωκόρος, παραγγελία παρηγγείλαμεν, ῥαδιούργημα, σκεῦος ἐκλογῆς, σπερμολόγος.

8. What differences of reading are there with regard to the following passages?

(a) καὶ ὡς τεσσαρακονταετῇ χρόνον ἐτροποφόρησεν αὐτοὺς ἐν τῇ ἐρήμῳ.

(b) μετ' οὐ πολὺ δὲ ἔβαλε κατ' αὐτῆς ἄνεμος τυφωνικός, ὃ καλούμενος Εὐροκλύδων.

MONDAY, June 1, 1885. 9—12.

ACTS OF THE APOSTLES.

(B)

1. At what periods of St Paul's life does it appear from this book that St Luke was in his company? Quote references to St Luke in any of the Epistles, and state at what time and place those Epistles were written.

2. What circumstances contributed to the growth of the Church in Palestine, as it is recorded in the first twelve chapters? Shew what was the attitude of (a) the rulers, (b) the people, of Jerusalem towards the Apostles.

3. τὸν ἀποστάντα ἀπ' αὐτῶν ἀπὸ Παμφυλίας καὶ μὴ συνελθόντα αὐτοῖς εἰς τὸ ἔργον. Of whom is this written? Write an account of his life as far as it may be gathered from the Bible.

4. What circumstances led to the assembling of the Council at Jerusalem recorded in the fifteenth chapter? State, and explain the object of, the decree of that Council.

5. Give a brief account of St Paul's missionary journeys in Greece.

6. Translate the following passages, stating in what connexion each occurs:

(a) καὶ ἐπὶ τῇ πίστει τοῦ ὀνόματος αὐτοῦ τοῦτον ὃν θεωρεῖτε καὶ οἴδατε ἐστερέωσε τὸ ὄνομα αὐτοῦ· καὶ ἡ πίστις ἡ δι' αὐτοῦ ἔδωκεν αὐτῷ τὴν ὁλοκληρίαν ταύτην ἀπέναντι πάντων ὑμῶν.

What is meant by ἡ πίστις ἡ δι' αὐτοῦ?

(b) μετανόησον οὖν ἀπὸ τῆς κακίας σου ταύτης, καὶ δεήθητι τοῦ Κυρίου, εἰ ἄρα ἀφεθήσεται σοι ἡ ἐπίνοια τῆς καρδίας σου. εἰς γὰρ χολὴν πικρίας καὶ σύνδεσμον ἀδικίας ὀρῶ σε ὄντα.

Explain the construction εἰς χολήν.

(c) ὁ δὲ Πέτρος αὐτὸν ἤγειρε, λέγων, Ἀνάστηθι· καγὼ αὐτὸς ἄνθρωπός εἰμι. καὶ συνομιλῶν αὐτῷ εἰσῆλθε, καὶ εὕρισκει συνεληλυθότας πολλούς, ἔφη τε πρὸς αὐτούς, Ὑμεῖς ἐπίστασθε ὡς ἀθέμιτόν ἐστιν ἀνδρὶ Ἰουδαίῳ κολλᾶσθαι ἢ προσέρχεσθαι ἀλλοφύλῳ· καὶ ἐμοὶ ὁ Θεὸς ἔδειξε μηδένα κοινὸν ἢ ἀκάθαρτον λέγειν ἄνθρωπον· διὸ καὶ ἀναντιρρήτως ἦλθον μεταπεμφθεῖς· πυνθάνομαι οὖν, τίني λόγῳ μετεπέμψασθέ με;

Distinguish between Ἑβραῖος, Ἰουδαῖος, Ἰσραηλῆτης.

(d) οἱ γὰρ κατοικοῦντες ἐν Ἱερουσαλὴμ καὶ οἱ ἄρχοντες αὐτῶν, τοῦτον ἀγνοήσαντες, καὶ τὰς φωνὰς τῶν προφητῶν τὰς κατὰ πᾶν σάββατον ἀναγινωσκομένας, κρίναντες ἐπλήρωσαν· καὶ μηδεμίαν αἰτίαν θανάτου εὐρόντες, ᾐτήσαντο Πιλάτον ἀναιρεθῆναι αὐτόν.

(e) βουλομένου δὲ αὐτοῦ διαλθεῖν εἰς τὴν Ἀχαΐαν, προτρεψάμενοι οἱ ἀδελφοὶ ἔγραψαν τοῖς μαθηταῖς ἀποδέξασθαι αὐτόν· ὃς παραγενόμενος συνεβόλετο πολὺ τοῖς πεπιστευκόσι διὰ τῆς χάριτος· εὐτόνως γὰρ τοῖς Ἰουδαίοις διακατηλέγχετο δημοσίᾳ, ἐπιδεικνὺς διὰ τῶν γραφῶν εἶναι τὸν Χριστὸν Ἰησοῦν.

What is meant by διὰ τῆς χάριτος? Give the derivation of εὐτόνως.

(f) διαλεγόμενου δὲ αὐτοῦ περὶ δικαιοσύνης καὶ ἐγκρατείας καὶ τοῦ κρίματος τοῦ μέλλοντος, ἔμβοσος γενόμενος ὁ Φῆλιξ ἀπεκρίθη, Τὸ νῦν ἔχον πορεύου· καιρὸν δὲ μεταλαβὼν μετακαλέσομαί σε· ἅμα καὶ ἐλπίζων, ὅτι χρήματα δοθήσεται αὐτῷ ὑπὸ τοῦ Παύλου· διὸ καὶ πυκνότερον αὐτὸν μεταπεμπόμενος ὠμίλει αὐτῷ.

Give some account of Felix.

(g) νησίον δὲ τι ὑποδραμόντες καλούμενον Καῦδα, ἰσχύσαμεν μόλις περικρατεῖς γενέσθαι τῆς σκάφης· ἦν ἄραντες βοηθείαις ἐχρῶντο, ὑποζωννύντες τὸ πλοῖον· φοβούμενοί τε μὴ εἰς τὴν Σύρτιν ἐκπέσωσι, χαλάσαντες τὸ σκεῦος, οὕτως ἐφέροντο.

Explain the nature of the operations referred to.

7. In what senses are the following words and phrases employed?

ἀγοραῖος, ἀναφάναντες τὴν Κύπρον, Ἀσία, εἰς διαταγὰς ἀγγέλων, ἔχουσιν πνεῦμα πύθωνα, παρεμβολή, τὰ περίεργα πράσσειν, σπείρης Σεβάστης, ἡ στρατιὰ τοῦ οὐρανοῦ, ὁ στρατηγὸς τοῦ ἱεροῦ, χρηματίζειν.

8. What differences of reading are there with regard to the following passages?

(a) εἶπε δὲ ὁ Φίλιππος, Εἰ πιστεύεις ἐξ ὅλης τῆς καρδίας, ἔξεστιν. ἀποκριθεὶς δὲ εἶπε, Πιστεύω τὸν υἱὸν τοῦ Θεοῦ εἶναι τὸν Ἰησοῦν Χριστόν.

(b) ποιμαίνειν τὴν ἐκκλησίαν τοῦ Θεοῦ, ἣν περιποιήσατο διὰ τοῦ αἵματος τοῦ ἰδίου.

MONDAY, June 1, 1885. 1-4.

STATICS.

(A)

1. EXPLAIN the terms *weight*, *mass*, and *density*.

If $3\frac{1}{2}$ cubic feet of lead weigh $21\frac{1}{2}$ cwts., find the weight of a cubic foot of the standard substance, the density of lead being 11.2.

2. Prove the proposition known as the *parallelogram of forces* so far as regards the direction of the resultant of two commensurable forces.

If two forces are represented in magnitude and direction by a side (of length l) and a diagonal of a square, prove that their resultant will be represented by a line of length $l\sqrt{5}$.

3. If three forces acting on a particle keep it in equilibrium and a triangle be drawn having its sides parallel to the lines of action of these forces, prove that the sides of the triangle will be proportional to the forces respectively parallel to them.

If the angle between two given forces be increased, shew that their resultant is diminished.

4. Shew that a force may be resolved into two components in an infinite number of ways.

A straight line OA is at right angles to another line COB , and forces each of 3 lbs. act one in OB , one in OA , and a third along the bisector of the angle COA . Find the magnitude of their resultant.

5. Define the centre of gravity of a body, and find the position of the centre of gravity of three equal weights placed at the corners of a triangle.

6. Shew clearly, by a figure, why in the common balance the point of suspension must be above the centre of gravity of the beam.

7. State how levers are classified and investigate which of them possess mechanical advantage.

A uniform heavy beam of length 7 feet rests horizontally on two supports, one at one end and the other $5\frac{1}{2}$ feet from that end; if the greatest weight that can be hung on at the other without disturbing the equilibrium be 16 lbs., find the weight of the beam.

8. Describe the system of pulleys in which one string goes round all the pulleys, and find the relation between the power and the weight.

If in the system in which each pulley hangs in the loop of a separate string there be three moveable pulleys their weights beginning from the lowest being 4, 2 and 1 lb., find what power will be required to support a weight of 48 lbs.

9. Find the relation between the power and the weight on an inclined plane, the power acting parallel to the plane.

A rope can just support a weight of $22\frac{1}{2}$ cwts. on an inclined plane whose base is 18 and height $7\frac{1}{2}$ ft.; find what weight it can support hanging freely.

MONDAY, June 1, 1885. 1—4.

STATICS.

(B)

1. DISTINGUISH between the *volume*, *mass*, and *density* of a body.

If 5 cubic feet of copper weigh $24\frac{1}{2}$ cwts., and a cubic foot of the standard substance weighs 1000 ounces, find the density of copper.

2. Assuming the proposition known as the *parallelogram of forces* to be true for the direction of the resultant, prove it for the magnitude.

ABC is an equilateral triangle; forces P , P , Q act along AC , CB , AB respectively; prove that the magnitude of their resultant is $P + Q$.

3. Enunciate and prove the *triangle of forces*.

Shew that the resultant of two forces increases as the angle between the forces diminishes.

4. Shew that a force can always be resolved into two components in given directions.

A straight line COB has a straight line OA at right angles to it, and forces each of 7 lbs. act, one in OB , another in OA , and a third along the bisector of the angle COA . Find the magnitude of their resultant.

5. Shew that the centre of gravity of a triangle lies in the straight line joining any angle to the middle point of the opposite side.

6. When a body, which can turn freely about a fixed point, is slightly displaced from its position of equilibrium, shew that it will tend to return to or recede from this position according as the centre of gravity is below or above the fixed point.

7. Classify levers, and explain carefully to which classes belong (i) a spade, (ii) the arm held out horizontally from the elbow with a weight in the hand.

A uniform bar of length $7\frac{1}{2}$ feet and weight 17 lbs. rests on a horizontal table with one end projecting $2\frac{1}{2}$ feet over the edge; find the greatest weight that can be hung on at this end without making the beam topple over.

8. Describe the system of pulleys in which each pulley hangs in the loop of a separate string, and find an expression for its mechanical advantage, when the pulleys are considered weightless.

If there be three moveable pulleys whose weights beginning from the lowest are 9, 2, 1 lb. respectively, find what power will support a weight of 69 lbs.

9. If a body be supported on a smooth inclined plane by a string attached to a point in that plane, find the relation between the tension of the string and the weight of the body.

If the height of the plane be $3\frac{1}{2}$ and the base 12 ft., and the string can just bear a weight of $24\frac{1}{2}$ lbs. hanging freely, find the greatest weight it can support on the plane.

TUESDAY, June 2, 1885. 9—12.

HYDROSTATICS AND HEAT.

(A)

1. DISTINGUISH between a solid, a viscous fluid, and a perfect fluid.

State the principle of the transmission of fluid pressure, and explain its application to the case of the safety-valve.

2. Prove that the surface of a fluid at rest under the action of gravity is a horizontal plane.

Find the pressure at a depth of 96 feet below the surface of the sea, the pressure of the atmosphere at the surface being 14 lbs. per square inch, the weight of a cubic foot of ordinary water 1000 ounces, and the specific gravity of sea water 1.035.

3. Investigate the resultant pressure of a fluid on a body partially immersed in it.

Two solids, whose weights are 4 and $6\frac{1}{2}$ lbs., the volume of the former being double that of the latter, are connected by a weightless string passing over a smooth pulley, and rest in equilibrium totally immersed in fluids of specific gravity 1.3 and 3.24 respectively. Find the volumes of the solids.

4. Shew clearly how the Hydrostatic Balance may be employed to find the density of a solid lighter than water.

A Nicholson's Hydrometer, whose own weight is $4\frac{3}{4}$ ounces, requires weights of 2 and $2\frac{3}{4}$ ounces respectively to sink it to the fixed mark in two different fluids. Compare the specific gravities of the fluids.

5. Describe any experiment to shew that every body exposed to the atmosphere is subject to pressure.

If this pressure at the surface of the earth be $14\frac{1}{2}$ lbs. per square inch, find the height of the water barometer in feet.

6. Describe the common pump, and its mode of action. Is there any limit to the depth from which it can raise water?

7. Describe the method of filling and graduating the mercury thermometer.

To what errors permanent and temporary is it liable?

8. State the law connecting the volume and temperature of a quantity of gas when the pressure is kept constant, and hence investigate the position of the *absolute zero point* on the Centigrade scale.

A quantity of gas at pressure 30.4 inches of mercury and temperature 33° C. occupies a volume of 42.5 cubic inches; find what the pressure becomes when the volume is altered to 40 cubic inches and the temperature to 6° C.

9. Define the ordinary unit of heat, and explain what is meant by the latent heat of evaporation and the latent heat of fusion.

A piece of iron whose weight is 5 lbs., temperature 80° C., and specific heat .113, is placed in Laplace's Calorimeter. Find how much water is produced, the latent heat of water being 79.

10. What is the usual effect of heat on the volume of a substance?

Mention an exception in the case of water, and a natural phenomenon that this accounts for.

11. Explain the deposition of Dew, and the various causes which influence this deposition.

Explain why moisture is sometimes deposited on the walls of a room heated by hot pipes, but not when heated by open fires.

12. Explain the following phenomena:

(i) A cold plate held for a short time above the flame of an ordinary gas burner becomes covered with dew.

(ii) A thick bar of ice, resting upon supports at each end, has a wire loop passing round it with a weight suspended from the loop. The wire gradually passes through the block, leaving it still in one piece.

TUESDAY, June 2, 1885. 9—12.

HYDROSTATICS AND HEAT.

(B)

1. DISTINGUISH between elastic and inelastic fluids.

Explain roughly the principle of the Bramah Press.

2. Prove that the pressure is the same at all points in a horizontal plane in the case of a heavy liquid under the action of no forces but gravity.

If the pressure of the atmosphere at the surface of the sea be $14\frac{1}{2}$ lbs. per square inch, find the pressure at a depth of 32 feet below the surface of the sea, a cubic foot of ordinary water being taken to weigh 1000 ounces, and the specific gravity of sea water being 1.035.

3. State what is the resultant fluid pressure on a body partially immersed in a fluid, and investigate the conditions of equilibrium of a body so floating.

Two solids, whose weights are $36\frac{1}{2}$ and 36 lbs., the volume of the former being three times that of the latter, are connected by a weightless string passing over a smooth pulley, and rest in equilibrium totally immersed in fluids of specific gravity 1.07 and 3.05 respectively. Find the volumes of the solids.

4. Shew clearly how Nicholson's Hydrometer may be employed to compare the specific gravities of a solid and a fluid.

If it requires weights of 2 and $2\frac{3}{4}$ ounces respectively to sink a Nicholson's Hydrometer to the fixed mark in fluids whose specific gravities are 1.8 and 1.9 respectively, find the weight of the hydrometer.

5. Describe the mercury barometer, explaining how it indicates the pressure of the atmosphere.

If the atmospheric pressure at the surface of the earth be $14\frac{3}{4}$ lbs. per square inch, find the height of the mercury barometer, the specific gravity of mercury being 13.6.

6. Describe the siphon, and its mode of action.

Why cannot it be used to convey water over a mountain?

7. Describe the air thermometer.

Why is it preferable to any mercury thermometer as a standard for defining temperature, but inferior to it for ordinary purposes?

8. Define the specific heat of a substance, and explain the term latent heat, giving two examples.

How much heat is required to change 5 lbs. of ice at -4°C . into water at 90°C ., and how much ice at 0°C . would this heat melt, the latent heat of water being 79 and the specific heat of ice .5?

9. Explain what is meant by absolute temperature, and investigate the position of the absolute zero on the Centigrade scale.

A quantity of gas at pressure 29.45 inches of mercury and temperature 6°C . occupies a volume of 40 cubic inches, find its temperature when the volume has increased to $42\frac{1}{2}$ cubic inches and the pressure to 30.4 inches of mercury.

10. What is meant by the point of maximum density of water, and what natural phenomenon is accounted for by the fact that water has a maximum density?

11. Explain the formation of clouds and rain, and how it is that there sometimes appears to be a stationary cloud round a mountain top, even when a strong wind is blowing.

12. Explain the following phenomena:

(i) A cold plate held for a short time above the flame of an ordinary gas burner becomes covered with dew.

(ii) On pressing a piece of ice upon a piece of wire gauze, the ice gradually passes through the gauze.

TUESDAY, *June 2*, 1885. 1—4.

CICERO'S SECOND PHILIPPIC.

(A)

1. TRANSLATE, explaining the allusions in the passages between asterisks:

(a) quamquam de morte Clodii fuit quaestio—non satis prudenter illa quidem constituta; quid enim attinebat *nova lege quaeri* de eo, qui hominem occidisset, cum esset legibus quaestio constituta? quaesitum est tamen —: quod igitur, cum res agebatur, nemo in me dixit, id tot annis post tu es inuentus qui diceres?

To what charge is Cicero replying?

(b) nam cum L. Lentulo C. Marcello consulibus Kalendis Ianuariis labentem et prope cadentem rem publicam fulcire cuperetis, ipsique C. Caesari, si sana mente esset, consulere uelletis, tum iste *uenditum atque emancipatum tribunatum* consiliis uestris opposuit ceruicesque suas ei subiecit securi, qua multi minoribus in peccatis occiderunt. in te, M. Antoni, id decreuit senatus et quidem incolumis, nondum tot luminibus extinctis, *quod in hostem togatum decerni est solitum* more maiorum.

(c) *deduxisti coloniam* Casilinum, quo Caesar ante deduxerat. consuluisti me per litteras de Capua tu quidem, sed idem de Casilino respondi: possesne, ubi colonia esset, eo coloniam nouam iure deducere. negaui in eam coloniam, quae esset auspiciato deducta, dum esset incolumis, coloniam nouam iure deduci: colonos novos adscribi posse rescripsi. tu autem insolentia elatus omni auspiciorum iure turbato Casilinum coloniam deduxisti, quo erat paucis annis ante deducta, ut *uexillum tol-leres*, ut *aratrum circumduceres*: cuius quidem uomere portam Capuae paene per-strinxisti, ut florentis coloniae territorium minueretur.

2. Write an account of Antonius's conduct after the assassination of Caesar until his departure from Rome.

3. What information does this speech afford as to the extent of the power of the augurs?

4. Comment on the construction of the words between asterisks in the following passages:

(a) consules ex Italia expulsos cumque iis Cn. Pompeium *quod* imperii populi Romani decus ac lumen fuit.

(b) uereor ne aut *celatum me* illis ipsis non honestum, aut inuitatum re-fugiase mihi sit turpissimum.

5. Translate into LATIN:

(a) There was not one of them who did not think that I ought to be spared.

(b) Forty million sesterces.

6. (a) illud tamen audaciae tuae quod sedisti in quattuordecim ordinibus, cum esset lege Roscia decoctoribus certus locus.

(b) illam mimam suas res sibi habere iussit, ex duodecim tabulis clauas ademit, exegit.

(c) tam bonus gladiator rudem tam cito?

(d) quaestor es factus: deinde continuo sine sorte, sine lege, ad Caesarem cucurristi.

(e) o tecta misera 'quam dispari domino.'

Explain these passages.

7. In what senses are the following used?

antesignanus, sectio, in reos referre, inter sicarios defendere, legem figere, sortitio praerogatiuae, tollere diem.

TUESDAY, June 2, 1885. 1—4.

CICERO'S SECOND PHILIPPIC.

(B)

1. TRANSLATE, explaining the allusions in the passages between asterisks:

(a) duo tamen tempora inciderunt, quibus aliquid contra Caesarem Pompeio suaserim. ea uelim reprehendas, si potes: unum, *ne quinquennii imperium Caesari prorogaret*, alterum, ne pateretur ferri ut absentis eius ratio haberetur. quorum si utrumvis persuasissem, in has miseras numquam incidissemus.

To what charge is Cicero replying?

(b) inde *iter Alexandream contra senatus auctoritatem*, contra rem publicam et religiones: sed habebat ducem Gabinium, quicum quidvis rectissime facere posset. qui tum inde reditus aut qualis? prius in ultimam Galliam ex Aegypto quam domum. quae autem domus? suam enim quisque domum tum obtinebat, nec erat usquam tua. domum dico? quid erat in terris, ubi in tuo pedem poneres praeter unum Misenum, quod cum sociis *tamquam Sisaponem* tenebas?

(c) et tu in Caesaris memoria diligens? tu illum amas mortuum? quem is honorem maiorem consecutus erat, quam ut haberet *puluinar, simulacrum, fastigium, flaminem?* est ergo flamen, ut Ioui, ut Marti, ut Quirino, sic diuo Iulio M. Antonius. quid igitur cessas? *cur non inauguraris?* sume diem, uide qui te inauguret: collegae sumus; nemo negabit. o detestabilem hominem, siue quod Caesaris sacerdos es, siue quod mortui! quaero deinceps, num hodiernus dies qui sit ignores? nescis heri quartum in circo diem ludorum Romanorum fuisse? te autem ipsum ad populum tulisse *ut quintus praeterea dies Caesari tribueretur?* cur non sumus praetextati? cur honorem Caesaris tua lege datum deserui patimur? an supplicationes addendo diem contaminari passus es, puluinaria contaminari noluisti?

2. Write an account of Cicero's conduct after the assassination of Caesar until his death.

3. What information does this speech afford as to the extent of the power of the tribunes?

4. Comment on the use of *non modo* in the following passages:

(a) C. Cassius, in ea familia natus, quae non modo dominatum, sed ne potentiam quidem cuiusquam ferre potuit.

(b) quos clientes nemo habere uelit, non modo illorum cliens esse.

5. Translate into LATIN:

(a) I persuaded the father to pay his son's debts.

(b) Twenty million sesterces.

6. (a) hasta posita pro aede Iouis Statoris bona Cn. Pompei Magni uoci acerbissimae subiecta praeconis.

(b) nos enim nuntiationem solum habemus, consules et reliqui magistratus etiam spectionem.

(c) illud Cassianum 'cui bono fuerit.'

(d) augur 'alio die' inquit.

(e) exsultabat persona de mimo 'modo egens repente diues.'

Explain these passages.

7. In what senses are the following used?

decoctor, praeuicator, acceptum referre, cum Gallicis et lacerna, legem rogare, me dius fidius, renuntiari consul.

WEDNESDAY, June 3, 1885. 9—12.

EURIPIDES. IPHIGENIA IN TAURIS.

(A)

1. WHERE is the scene of the play? What had been the story of Iphigenia before the opening of the plot?

2. Of what **two** elements does a Greek Tragedy consist? How far can the play be said to be broken up into acts or scenes? Explain the words *ἐπεισίδιον*, *πρόλογος*, *στάσιμον*.

3. What is the probable etymology of the name *Iphigenia*? What festival in Attica was connected with the legend of Iphigenia? What is the meaning and derivation of *ξόανον*?

4. Comment on the use of the words marked in the following, as to their construction, derivation, or meaning:

(1) μεταρσία ληφθεῖς' ἐκαινόμην ξίφει.

(2) ὃ τι γὰρ ἐνιαυτὸς τέκοι
κάλλιστον, εὖζω φωσφύρω θύσειν θεῶ.

(3) χέρνιβας δὲ καὶ κατάργματα
οὐκ ἂν φθάνοις ἂν εὐτρεπῇ ποιουμένην.

(4) Πυλάδῃ, θανούμεθ', ἀλλ' ὅπως θανούμεθα
κάλλιστα.

(5) εὐφημα φώνει· τὰμὰ δεῖ φέρειν κακά,
ἀπλᾶς δὲ λύπας ἐξόν, οὐκ οἶσω διπλᾶς.

(6) πῶς φής; τί πνεῦμα συμφορᾶς κεκτημένην;

(7) οἶσθ' οὖν ᾧ μοι γενέσθω;

5. Translate

ἔστιν γὰρ ὁσία ψῆφος, ἣν Ἄρει ποτὲ
Ζεὺς εἶσατ' ἐκ του δὴ χερῶν μιάσματος.

To what Court does this refer? What were its functions? Describe the trial as here detailed. In what respect does it differ from the account of Æschylus? What is meant by *ψῆφος Ἀθηνᾶς*?

6. Translate

(a) εἴθ' εὐχαῖσιν δεσποσύνοις
Λήδας Ἑλένα φίλα παῖς
ἐλθοῦσα τύχοι τὰν
Τρῳάδα αἵματηράν
εἰλιχθεῖσα λαιμοτόμῳ
δεσποίνας χερὶ θάνη
ποινας δοῦσ' ἀντιτάλους.

- (b) OP. τίς εἰ ποθ'; ὡς εὖ πυνθάνει τὰ φ' Ἑλλάδος.
 ΙΦ. ἐκεῖθεν εἰμι· παῖς ἔτ' οὐσ' ἀπ' ἀρχόμην.
 OP. ὀρθῶς ποθεῖς ἄρ' εἰδέναι τὰ κεῖ, γύναι.
 ΙΦ. τί δ' ὁ στρατηγός, ὃν λέγουσ' εὐδαιμονεῖν;
 OP. τίς; οὐ γὰρ ὃν γ' ἐγώ φ' ἔδα τῶν εὐδαιμόνων.
 ΙΦ. Ἀτρέως ἐλέγετο δὴ τις Ἀγαμέμνων ἄναξ.

- (c) χρόνῳ δ', ἵν' ἡμῖν δρᾶν τι δὴ δοκοῖ πλέον,
 ἀνωλόλυξε καὶ κατῆδε βάρβαρα
 μέλη μαγεύουσ', ὡς φόνον νίζουσα δὴ.
 ἐπεὶ δὲ δαρὸν ἦμεν ἡμενοὶ χρόνον,
 ἐσῆλθεν ἡμᾶς μὴ λυθέντες οἱ ξένοι
 κτάνοιεν αὐτὴν δραπεταὶ τ' οἰχοῖατο.
 φόβῳ δ' ἂ μὴ χρῆν εἰσορᾶν καθήμεθα
 σιγῇ· τέλος δὲ πᾶσιν ἦν αὐτὸς λόγος,
 στείχειν ἵν' ἦσαν, καί περ οὐκ ἑωμένοις.
 κἀνταῦθ' ὀρώμεν Ἑλλάδος νεὸς σκάφος
 ταρσῶ κατῆρες, πύτυλον ἐπτερωμένον,
 ναύτας τε πεντήκοντ' ἐπὶ σκαλῶν πλάτας
 ἔχοντας, ἐκ δεσμῶν δὲ τοὺς νεανίας
 ἐλευθέρους πρύμνηθεν ἐστῶτας νεώς.
 κοντοῖς δὲ πρῶραν εἶχον, οἱ δ' ἐπωτίδων
 ἄγκυραν ἐξανήκτον, οἱ δὲ κλίμακας
 σπεύδοντες ἦγον διὰ χερῶν πρυμνήσια,
 πόντῳ δὲ δόντες τοῖν ξένοιον καθίσαν.

7. Parse

ῥοσαῖατο, ἐξενεύσας, πελάσσαι, πλατᾶν, σταίην, ἐξαύδα, παλιμπρυμνηδόν,
 ἀπενάσθην.

8. What other authors have imitated or translated this play, or written a play on the same subject?

9. Point out the difficulty in the following, and, if you can, suggest an emendation of the MS. reading:

δεινὴ τις ὀργὴ δαιμόνων ἐπέζεσε
 τὸ Ταντάλειον σπέρμα διὰ πόνων τ' αἰεί.

WEDNESDAY, June 3, 1885. 9—12.

EURIPIDES. IPHIGENIA IN TAURIS.

(B)

1. WRITE a brief plot of the play. Whence had Orestes come, and where was the Temple of Artemis in which Iphigenia was serving?

2. Of whom does the Chorus in this play consist? What part do they take in the plot? Explain the terms *πάροδος*, *κομμός*, *ἐξοδός*.

3. Is there any trace of the scepticism as to religion, generally attributed to Euripides, in this play? What is meant by an *aetiological* legend? Show in what way the legend of Iphigenia may be so denominated.

4. Comment on the words marked in the following, as to their construction, derivation, or meaning:

- (1) Πέλοψ ὁ Ταντάλειος εἰς Πίσαν μολῶν
θοαῖσιν ἵπποις Οἰνομάου γαμει κόρην.
- (2) ἀλλ' οἷσθ' ὃ δράσω; πολλὰ γὰρ πολλῶν κυρεῖ.
- (3) ἴτ' ἐπὶ δεσμά, πρόσπολοι.
- (4) χωρεῖν χρεῶν
ὅποι χθονὸς κρύψαντε λήσομεν δέμας.
- (5) καλόν τοι γλῶσσ' ὅτφ πιστὴ παρῇ.
- (6) πάντα γὰρ τὰ τῶν θεῶν
εἰς ἀφανὲς ἔρπει, κούδ' οἷδ' οὐδεὶς τέλος.
- (7) παρὰ δ' ὀλίγον
ἀπέφυγες δλεθρον ἀνόσιον ἐξ ἐμῶν
δαΐχθεις χερῶν.

5. Translate

ὥς δ' εἰς Ἄρειον ὄχθον ἦκον, ἐς δίκην
ἔστην, ἐγὼ μὲν θάτερον λαβὼν βάθρον,
τὸ δ' ἄλλο πρέσβειρ' ἦπερ ἦν Ἐρινύων.

What arrangement in an Attic Court of Justice is here alluded to? What do you know of the history and functions of the Areopagus? What was the result of the trial to Orestes, and on what grounds?

6. Translate

- (a) λαμπρὸν ἱππόδρομον βαίην,
ἐνθ' εὐάλιον ἔρχεται πῦρ
οἰκείων δ' ὑπὲρ θαλάμων
πτέρυγας ἐν νώτοις ἀμοῖς

λήξαιμι θαάζοντα·
 χορούς δ' ἰσταίην, ὅθι καὶ
 πάροχος εὐδοκίμων γάμων,
 παρὰ πόδ' εἰλίσσουσα φίλας
 ματρὸς ἡλίκων θιάσους,
 εἰς ἀμίλλας χαρίτων,
 χλιδᾶς ἀβροπλούτοιο
 εἰς ἔριν ὀρνυμένα, πολυτοίκιλα φάρεα
 καὶ πλοκάμους περιβαλλομένα γένυσιν
 ἐσκιάζον.

- (b) OP. ἄρ' ἂν τύραννον διολέσαι δυναίμεθ' ἂν;
 IΦ. δεινὸν τόδ' εἶπας, ξενοφονεῖν ἐπήλυδας.
 OP. ἀλλ' εἰ σέ σώσει κάμῃ, κινδυνευτέον.
 IΦ. οὐκ ἂν δυναίμην, τὸ δὲ πρόθυμον ἦνεσα.
 OP. τί δ', εἴ με ναῶ τῷδε κρύψειας λάθρα;
 IΦ. εἴς' ἔνδον ἱεροῦ φύλακες, οὓς οὐ λήσομεν.
 OP. οἴμοι διεφθάρμεσθα πῶς σωθεῖμεν ἂν;
 IΦ. ἔχειν δοκῶ μοι καινὸν ἐξεύρημά τι.
 OP. ποῖόν τι; δόξης μετάδος, ὥς καγὼ μάθω.
 IΦ. ταῖς σαῖς ἀνίαις χρήσομαι σοφίσμασιν.
 OP. δειναὶ γὰρ αἱ γυναῖκες εὐρίσκουν τέχνας.

- (c) οἱ δὲ στεναγμὸν ἡδὺν ἐκβρυχώμενοι
 ἔπαισαν ἄλμην. ναῦς δ', ἕως μὲν ἐντὸς ἦν
 λιμένος, ἐχώρει στόμια διαπερῶσα δὲ
 λάβρῳ κλύδωνι συμπεσοῦσ' ἠπείγετο·
 δεινὸς γὰρ ἐλθὼν ἄνεμος ἐξαίφνης νεῶς
 ὤθει παλιμπρυνηδόν· οἱ δ' ἐκαρτέρουν
 πρὸς κέντρα λακτίζοντες· εἰς δὲ γῆν πάλιν
 κλύδων παλίρρους ἤγε ναῦν.

7. Parse

οἰχοίατο, σέσεται, ἐξένευσε, ἀμπτάμενος, προδοῦς, δμαθέντα, φροντιστέον, δραμεῖσθε.

8. This play has been said to be one of incident rather than character. Criticise this statement: and comment on any character in the play that has struck you.

9. Correct the reading of the MS. in the first line of the following, and explain the construction of the accusatives ἀπόλαυσιν and χάριν:—

καὶ γὰρ ὀνείρασι συμβαίην
 δόμοις πόλει τε πατρῷᾳ
 τερπνῶν ὕπνων ἀπόλαυ-
 σιν, κοινὰν χάριν πλούτῳ.

WEDNESDAY, June 3, 1885. 1—4.

ALGEBRA.

(A)

1. FIND a value of x which will make $x^3 + 7x^2 - 49x + 8x + 2585$ exactly divisible by $x^2 - 7x + 1$.

2. Solve the equations

$$(1) \quad \frac{x+1}{x+2} + \frac{x+2}{x+3} = 1\frac{5}{12}.$$

$$(2) \quad \sqrt{4+x} + \sqrt{6-x} = \sqrt{6+2x}.$$

$$(3) \quad \left. \begin{aligned} \frac{m}{x} + \frac{n}{y} &= 2 \\ ny - mx &= n^2 - m^2 \end{aligned} \right\}.$$

3. If α, β are the roots of the quadratic $x^2 + rx + s = 0$, shew that $\alpha\beta - s = 0$.
Prove that the roots of $4x^2 + 2rx + s = 0$ are $\frac{1}{2}\alpha$ and $\frac{1}{2}\beta$.

4. The gross income of a certain man was £30 more in the second of two particular years than in the first, but in consequence of the income-tax rising from 5*d.* in the pound in the first year to 8*d.* in the pound in the second year, his net income after paying income-tax was unaltered. Find his income in each year.

5. A farmer spends £200 on cows and £540 on horses; if the cost of each cow had been £22 more and that of each horse £3 less the cost of a cow and of a horse would have been the same and the farmer would have spent £184 more; find how many of each he purchased.

6. A certain number exceeds twice the product of its digits by 35 and exceeds three times the sum of its digits by 50: find the number.

7. If a, b, c, d are proportionals, prove that $a+b : a-b = c+d : c-d$.

Shew also that if $2a+3b, 2a-3b, 2c+3d$ and $2c-3d$ are proportionals so also are a, b, c, d .

8. Shew that a ratio of greater inequality is diminished by adding the same quantity to both its terms.

What number must be added to both terms of the ratio 9 : 7 to make it 12 : 11?

9. Find the sum of n terms of an arithmetical progression, of which the first term is a , and the common difference b .

Shew that the sum of 5 terms of the series $11+9+7+\dots$ is equal to the sum of 7 terms.

10. Find the n th term of a geometrical progression of which the first two terms are given.

11. Sum the series

$$(1) \quad 40 + 20 + 10 + 5 + \dots \text{ to 8 terms.}$$

$$(2) \quad 40 + 20 + 0 - 20 - \dots \text{ to 8 terms.}$$

$$(3) \quad 1.5 + 3 + 4.5 + 6 + \dots \text{ to 8 terms.}$$

Can any of these series be summed to infinity? if so sum them.

12. If the sum of n terms of an arithmetical progression whose first term is 7 and common difference 2 be 247, find the value of n .

WEDNESDAY, June 3, 1885. 1—4.

ALGEBRA.

(B)

1. FIND a value of x which will make $x^3 - 8x^2 + 11x - 1789$ exactly divisible by $x^2 + 7x - 1$.

2. Solve the equations

$$(1) \frac{2x+1}{x+3} + \frac{2x+2}{x+2} = 2\frac{1}{2},$$

$$(2) \sqrt{3+x} + \sqrt{7-x} = \sqrt{4+2x},$$

$$(3) \left. \begin{aligned} \frac{a}{x} + \frac{b}{y} &= 2 \\ ax - by &= a^2 - b^2 \end{aligned} \right\}.$$

3. If α, β be the roots of the quadratic equation $x^2 + mx + n = 0$ shew that $\alpha + \beta + m = 0$.

Prove that the roots of $x^2 + 2mx + 4n = 0$ are 2α and 2β .

4. The gross income of a certain man was £40 more in the second of two particular years than in the first, but in consequence of the income-tax rising from 4d. in the pound in the first year to 6d. in the pound in the second year, his net income after paying income-tax was unaltered. Find his income in each year.

5. A farmer spends £450 on horses and £240 on cows; if the cost of each horse had been £5 less and that of each cow £20 more, the cost of a horse and a cow would have been equal and the total expenditure would have been increased by £190; find the number of each that were purchased.

6. A certain number exceeds the product of its digits by 52 and exceeds twice the sum of its digits by 53: find the number.

7. If x, y, u, v are proportionals, prove that $x+u : x-u = y+v : y-v$.

Shew also that if $3x+2u, 3x-2u, 3y+2v, 3y-2v$ are proportionals so also are x, y, u, v .

8. Shew that a ratio of less inequality is increased by adding the same quantity to both its terms.

Find what number must be added to both terms of the ratio 5 : 6 to make it 20 : 21.

9. Find the sum of n terms of a geometrical progression of which the first term and common factor are known.

Shew that the sum of 10 terms of the series 5, 10, 20, 40, ... is 33 times the sum of 5 terms of the series.

10. Find the n^{th} term of an arithmetical progression whose first term is a and second term b .

11. Sum the series

$$(1) 30 + 15 + 7\frac{1}{2} + \dots \text{ to 8 terms.}$$

$$(2) 30 + 15 + 0 - 15 \dots \text{ to 8 terms.}$$

$$(3) 1\cdot2 + 2\cdot4 + 3\cdot6 + \dots \text{ to 8 terms.}$$

Can any of these series be summed to infinity? if so sum them.

12. If the sum of n terms of an arithmetical progression whose first term is 11 and common difference 3 be 377, find the value of n .

THURSDAY, June 4, 1885. 9—12.

SHAKESPEARE'S KING RICHARD THE SECOND.

1. WHO appears to have been Shakespeare's chief historical authority for this play? Are there many deviations from historical accuracy?

2. Give an account of the events of the first act.

3. Paraphrase the following passage and point out and explain any words used in a sense now unusual and state the circumstances under which it was spoken:

This land of such dear souls, this dear dear land,
 Dear for her reputation through the world,
 Is now leased out, I die pronouncing it,
 Like to a tenement or pelting farm:
 England, bound in with the triumphant sea,
 Whose rocky shore beats back the envious siege
 Of watery Neptune, is now bound in with shame,
 With inky blots and rotten parchment bonds:
 That England, that was wont to conquer others,
 Hath made a shameful conquest of itself.
 Ah, would the scandal vanish with my life,
 How happy then were my ensuing death. Act. II. Sc. 1.

4. Give as complete an account as you can of the conspiracy referred to below, and point out how Shakespeare's account differs from the actual facts:

BOLINGBROKE. O heinous strong and bold conspiracy!
 O loyal father of a treacherous son!
 Thou sheer, immaculate and silver fountain,
 From whence this stream through muddy passages
 Hath held his current and defiled himself!
 Thy overflow of good converts to bad,
 And thy abundant goodness shall excuse
 This deadly blot in thy digressing son. Act v. Sc. 3.

5. Point out the sense in which the words printed in italics are used in the following passages:

MOWBRAY. I am disgraced, impeached, and *baffled* here. Act I. Sc. 1.

ROSS. The commons hath he *pill'd* with grievous taxes. Act II. Sc. 1.

BOLINGBROKE. I am denied to *sue my livery* here. Act II. Sc. 3.

GARDENER. Depress'd he is already, and deposed
 'Tis *doubt* he will be. Act III. Sc. 4.

K. RICH. and let them tell thee tales
 Of woeful ages long ago *betid*. Act v. Sc. 1.

NORTH. *Imp* out our drooping country's broken wing. Act II. Sc. 1.

BOLINGBROKE. Call forth Bagot.
 Now, Bagot, freely speak thy mind;
 What thou dost know of noble Gloucester's death,
 Who wrought it with the king, and who performed
 The bloody office of his *timeless* end. Act IV. Sc. 1.

6. Give Shakespeare's narrative of the death of Richard the Second.

ENGLISH ESSAY.

Write an essay on *one* of the following subjects :

1. The death of General Gordon.
2. The probable effects of a war between England and Russia.
3. Experiments on living animals.
4. The question of giving a vote to, or withholding it from, undergraduates who are otherwise properly qualified.

THURSDAY, June 4, 1885. 1—4.

For LATIN PROSE :

1. The king was then at the highest point of his greatness. He had been victorious ever since he had begun to reign. He had never besieged a town which he had not taken. He had beaten his enemies in every kind of warfare, though so many were leagued against him. For six years he had been the terror of Europe. He was now the arbiter of its destinies, and dictated the terms on which it was to enjoy peace. He had added three provinces to his kingdom. And, what was still more to his credit, his subjects were happy, envied and imitated by the rest of the world. The citizens of the Capital solemnly bestowed upon him the name of 'the Great,' and voted that that title alone should be inscribed on all the public monuments. Certain medals indeed were struck with this title: but custom is stronger than law: titles of honour seldom survive to posterity: the name of a man who has done great deeds attracts greater reverence than any epithets. Who speaks of the *Great* Caesar or the *Great* Vergil? And is not Alexander as well known as Alexander the Great?

2. The stronghold itself was on the top of a hill of a sufficient height to be impregnable except by a regular siege, and further defended on two sides by streams flowing at its foot. This hill was the centre of a circle of hills which surrounded it on all sides and at no great distance. It had too been strengthened on its exposed side by a ditch and a wall six feet high, which was guarded by the enemy day and night with strong detachments of the garrison and sentinels frequently relieved. Provisions for many months had been collected; the garrison was in high spirits and in good health; and there seemed every prospect of their offering a long and determined resistance.

PREVIOUS EXAMINATION.

MONDAY, *June* 8, 1885. 9—11½.

PALEY'S EVIDENCES.

(A)

1. How does Paley criticise the objection that "it is contrary to experience that miracles should be true"?
 2. Write out Proposition I. and state the conclusion which Paley draws from it.
 3. In what points did the mode of the Apostles' teaching differ from that of the Philosophers, and how would this difference affect the Apostles?
 4. Quote passages showing that each of the four Gospels represents Christ as foretelling persecution of his followers.
 5. What inference would Paley draw on finding in a writing of the second century a quotation from one of the Gospels?
 6. Show why, in the case of the Gospels, particularity in names, dates, and places, may fairly be urged as a mark of historical truth.
 7. How does Paley show that the Apostles were not themselves deceived in asserting the fact of Christ's resurrection?
 8. What inference does Paley gather from a comparison of the early progress of Christianity with the success of modern Christian missions?
 9. What remarks does Paley offer on Tacitus' expression 'exitiabilis superstitio' in reference to Christianity?
 10. What answer does Paley make to the paradox that "so far as it is believed, Christianity produces no good but rather a bad effect on public happiness"?
-

MONDAY, June 8, 1885. 9—11½.

PALEY'S EVIDENCES.

(B)

1. How does Paley deal with 'want of experience' as an objection against belief in miracles?
 2. Write out Proposition II. What is its bearing on Paley's argument?
 3. What considerations make it probable that the first propagators of Christianity would meet with opposition from the Jews?
 4. Quote from Epistles of the New Testament by different authors examples of exhortation to patience under suffering.
 5. What argument for the authenticity of our Books may be drawn from their style?
 6. On what grounds does Paley assert that the morality of the Gospels is a reason for accepting the story they contain?
 7. What does Paley say constitutes the peculiar weight of the history of the Resurrection of Christ as a part of the evidence of Christianity?
 8. How does Paley argue that the success of Christianity is evidence of the truth of the Christian miracles?
 9. How does Paley account for the rejection of Christianity by the Jews?
 10. How does Paley deal with the objection that if Christianity be true it should be universal and irresistible?
-

MONDAY, *June* 8, 1885. 9—11½.

LOGIC.

1. DISTINGUISH between Logic and Grammar.
 2. What meanings do logical writers give to the terms Denotation and Connotation?
Mention some words which have no Denotation and others which have no Connotation.
 3. Explain and illustrate the logical processes of Generalization and Specialization.
 4. Give the rules for correct logical definition.
Why is definition necessary to recognition?
 5. What does a logical proposition express?
How does the logical differ from the grammatical form of a proposition?
 6. Show that the Middle Term must be distributed in one Premiss at least of a Syllogism.
If the Major Premiss of a Syllogism in the first figure is affirmative why must the conclusion be affirmative?
 7. Supply the assumptions and examine the cogency of the following arguments:—
 - (1) A riot must have been apprehended in Mallow last week, or they would not have sent for the police.
 - (2) War must be expected, for the price of wheat is daily advancing.
 8. Show the precise distinction between the three kinds of reasoning (a) from particular to general, (b) from particular to particular, (c) from general to particular.
 9. Write down the definitions, axioms, and postulates involved in proving the Causal dependence of phenomena by the Method of Agreement.
 10. How would you prove inductively and deductively:—that food is necessary to life?
-

MONDAY, June 8, 1885. 1—3½.

EUCLID.

(A)

(a)

1. DEFINE a plane superficies, a rhombus, a segment of a circle, and compound ratio.
2. On the same base, and on the same side of it, there cannot be two triangles having their sides which are terminated at one extremity of the base equal to one another, and likewise those which are terminated at the other extremity.
3. Describe a square on a given straight line.
4. If a straight line be bisected, and produced to any point, the rectangle contained by the whole line thus produced, and the part of it produced, together with the square on half the line bisected, is equal to the square on the straight line which is made up of the half and the part produced.
5. Draw a straight line from a given point, either without or in the circumference, which shall touch a given circle.
6. On a given straight line describe a segment of a circle, containing an angle equal to a given rectilineal angle.
7. If the sides of two triangles, about each of their angles, be proportionals, the triangles shall be equiangular to one another, and shall have those angles equal which are opposite to the homologous sides.
8. Equal parallelograms which have one angle of the one equal to one angle of the other, have their sides about the equal angles reciprocally proportional.

(b)

9. Explain the terms *adjacent*, *alternate*, *opposite*, *exterior*, as applied to angles.
 10. Two triangles ABC , DBC , equal in all respects, are placed on opposite sides of the base BC : prove that AD will either be at right angles to BC or will bisect it: and will, in either case, be bisected by BC .
 11. A circle is described to pass through a fixed point A and also through the extremities P , P' of any diameter of a circle whose centre is O . Prove that it will cut AO produced in a fixed point.
 12. $ABCD$ is a square. P and Q are points in AB and DC respectively such that AP is to PB as 1 is to 4 and DQ is to QC as 2 is to 3, find the ratios in which PQ cuts each of the diagonals.
-

MONDAY, June 8, 1885. 1—3½.

EUCLID.

(B)

(a)

1. DEFINE a straight line, a square, a sector of a circle, and duplicate ratio.
2. Draw a straight line perpendicular to a given straight line of unlimited length, from a given point without it.
3. Parallelograms on the same base, and between the same parallels, are equal to one another.
4. If a straight line be divided into two equal parts and also into two unequal parts, the rectangle contained by the unequal parts, together with the square on the line between the points of section, is equal to the square on half the line.
5. Equal straight lines in a circle are equally distant from the centre: and those which are equally distant from the centre are equal to one another.
6. If a straight line touch a circle, and from the point of contact a straight line be drawn cutting the circle, the angles which this line makes with the line touching the circle shall be equal to the angles which are in the alternate segments of the circle.
7. If two triangles have one angle of the one equal to one angle of the other, and the sides about the equal angles proportionals, the triangles shall be equiangular to one another, and shall have those angles equal which are opposite to the homologous sides.
8. Equal triangles which have one angle of the one equal to one angle of the other, have their sides about the equal angles reciprocally proportional.

(b)

9. What is meant by a *reductio ad absurdum*? For what kind of proposition is it generally employed? Give two instances of its use.
 10. Three equal and parallel straight lines AB , CD , EF have their extremities joined towards the same parts A , C , E and B , D , F . Shew that the triangles ACE , BDF , are equal in all respects.
 11. O and P are any two points on a circle. With centre O and any radius less than OP a circle is described so as to cut the first circle in A and B ; prove that PO bisects the angle APB .
 12. Two equal parallelograms $ABCD$ and $A'EFG$ have a common angle A ; AB , $A'E$ being in the same straight line, and AD , $A'G$ in the same straight line: prove that BG , CF , DE are all parallel, and that one of these three lines is equal to the sum of the other two.
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TUESDAY, *June 9*, 1885. 9—11½.

ARITHMETIC.

(A)

1. ADD together: Twenty-five million three hundred and sixty thousand one hundred and forty, One million five thousand and three, Thirteen hundred and seventeen million ten thousand and eighteen; and take from the result Three hundred and fifty-two million four hundred and eighty-seven thousand and sixty-four.

2. Simplify

$$3\frac{1}{2} \text{ of } \frac{13\frac{1}{2} - 5\frac{1}{2}}{19\frac{1}{2} - 15\frac{3}{8}} \div 1\frac{1}{48} + \frac{7}{118}.$$

3. Divide 312·69213 by ·0023.

Reduce ·87 - ·259 - ·56 to a vulgar fraction.

4. Extract the square root of 2633229225.

Find also the square root of 322·3 to three places of decimals.

5. Reduce $\frac{2}{14}$ of $9\frac{1}{2}$ guineas + $\frac{1}{2}$ of $\frac{7}{15}$ of £3. 6s. 8d. - $\frac{7}{4}$ of 5s. 4d. to the fraction of £14. 6s.

6. Find the rent of 404 acres, 1 rood, 24 poles, 20 sq. yds. at £4. 10s. 9d. per acre.

7. If 5 men can mow a square meadow in 4 days, in what time can 9 men mow a square meadow half as long again as the former?

8. Find the true discount on £17. 2s. 10d. for 219 days at $4\frac{3}{4}$ per cent.

9. A dealer bought two horses, giving one-third as much again for one as for the other. He sold the more expensive horse at a gain of 15 per cent. and the other at a loss of 5 per cent., receiving £149 in all for the two. What was the price paid for each?

10. Find the change in income due to transferring £5670 $4\frac{1}{2}$ per cent. stock at $83\frac{1}{2}$ to $5\frac{1}{2}$ per cent. stock at $94\frac{3}{8}$, a brokerage of $\frac{1}{8}$ per cent. being charged on each transaction.

TUESDAY, *June 9*, 1885. 9—11½.

ARITHMETIC.

(B)

1. ADD together: Thirty-six million four hundred and fifty thousand two hundred and thirty-five, Two million six thousand and seven, Nine thousand five hundred and fourteen million seven thousand and seventeen; and take from the result Five hundred and fifty-three million five hundred and seventy-four thousand nine hundred and ninety-eight.

2. Simplify

$$2\frac{3}{7} \text{ of } \frac{15\frac{1}{2} - 7\frac{3}{8}}{17\frac{1}{7} - 14\frac{5}{8}} \div \frac{4\frac{1}{8}}{8\frac{1}{8}} + \frac{5\frac{1}{8}}{7\frac{1}{8} - 6\frac{3}{8}}.$$

3. Divide 1876·15278 by ·069.

Reduce $7\hat{6} - 18\hat{5} + 3\hat{5}$ to a vulgar fraction.

4. Extract the square root of 9443758041.

Find also the square root of 477·4 to 3 places of decimals.

5. Reduce $\frac{7}{8}$ of $\frac{1}{4}$ of 20 guineas - $\frac{2}{5}$ of £6. 13s. 4d. + $1\frac{1}{8}$ d. to the fraction of £13.

6. Find the rent of 306 acres, 3 roods, 25 poles, 10 square yards at £3. 10s. 7d. per acre.

7. If 9 men can mow a square meadow in 4 days, in what time can 7 men mow a square meadow one-sixth as long again as the former?

8. Find the present worth of £14. 16s. 11d. due at the end of 146 days at $4\frac{1}{4}$ per cent.

9. A dealer bought two horses, giving one-twelfth as much again for one as for the other. He sold the more expensive horse at a gain of 10 per cent. and the other at a gain of 25 per cent., receiving £146. 10s. in all for the two. What was the price paid for each?

10. A man transfers his capital from 4 per cent. stock to $5\frac{1}{4}$ per cent. stock when the former is at $100\frac{1}{8}$ and the latter at $109\frac{1}{8}$, and finds that by the change his income is increased by £12. If a brokerage of $\frac{1}{8}$ per cent. be charged on each transaction, find how much 4 per cent. stock he held.

TUESDAY, June 9, 1885. 1 to 3½.

ALGEBRA.

(A)

1. SHew that $x(x+1)(x+2)(x+3)+1=(x^2+3x+1)^2$.
2. Divide $x^4 - x^3 - 5x^2 + 2x$ by $x^2 - 3x + 1$,
and explain the process.
Divide also $x^5 - 2a^4x^4 + a^5$ by $x^3 + ax^2 + a^2x + a^3$.
3. Find the factors of the following expressions:—
(i) $x^2 - 4x^3 + 4x$, (ii) $x^3 - x^2 - x + 1$, and (iii) $x^2y^2 - x^2 - y^2 + 1$.
4. Simplify $\frac{a-x}{a+x} + \frac{4ax}{a^2-x^2} + \frac{a+x}{a-x}$,
and shew that $\frac{a}{(a-b)(a-c)} + \frac{b}{(b-c)(b-a)} + \frac{c}{(c-a)(c-b)} = 0$.
5. Solve the following equations:—
(i) $\frac{x-3}{2} - \frac{x-1}{4} + \frac{x+1}{6} - \frac{x+3}{8} = 0$.
(ii) $\frac{a}{x+b} + \frac{b}{x+a} = \frac{a+b}{x}$.
(iii) $3x - 4y + 2 = 5x - 6y - 2 = 7x + 2y + 4$.
(iv) $21x^2 - 58x + 21 = 0$.
(v) $2x^2 + 3xy = 8$, $y^2 - 2xy = 20$.
6. A number of two digits is equal to seven times the sum of its digits:
shew that one digit is double the other.
7. A and B have £50 between them; but if A were to lose half his money,
and B were to lose two-thirds of his, they would then have only £20. How much
has each?
8. Shew that, when m and n are positive integers, $a^m \times a^n = a^{m+n}$.
Find what a^0 and $a^{\frac{1}{2}}$ must mean supposing that the above law holds good for
all values of m and n .
9. Define ratio, and shew that when a is less than b , and a , b and x are
all positive, $a+x : b+x$ is greater than $a : b$.
Shew that, if $a : b :: c : d$, then will $a^2 - b^2 : c^2 - d^2 :: ab : cd$.
10. The first of a series of quantities in arithmetical progression is 5, and
the seventh is 8: find the sixth term of the series, and the sum of the first ten
terms.
Find the sum of all the numbers between 100 and 200 which are divisible
by 3.
11. Sum the following series:—
(i) $3+7+11+\dots$ to 20 terms.
(ii) $8-4+2-1+\dots$ to infinity.
(iii) $\frac{1}{3} + \frac{1}{4} + 3 + \dots$ to 29 terms.

TUESDAY, June 9, 1885. 1—3½.

ALGEBRA.

(B)

1. SHew that $y(y-1)(y-2)(y-3)+1=(y^2-3y+1)^2$.2. Divide $y^4+y^3-5y^2-2y$ by y^2+3y+1 , and explain the process.
Divide also $y^3-2b^4y^2+b^5$ by $y^2+by^2+b^2y+b^3$.

3. Find the factors of the following expressions:—

(i) y^3+4y^2+4y , (ii) y^2+y^2-y-1 , and (iii) $a^2b^2-a^2-b^2+1$.

4. Simplify

$$\frac{b+y}{b-y} + \frac{4by}{b^2-y^2} + \frac{b-y}{b+y},$$

and shew that

$$\frac{x}{(x-y)(x-z)} + \frac{y}{(y-z)(y-x)} + \frac{z}{(z-x)(z-y)} = 0.$$

5. Solve the following equations:—

$$(i) \quad \frac{y-5}{2} - \frac{y-3}{4} + \frac{y+3}{5} - \frac{y+5}{6} = 0.$$

$$(ii) \quad \frac{c}{x-d} - \frac{d}{x+c} = \frac{c-d}{x}.$$

$$(iii) \quad 4x-6y-3=7x+2y-4=-2x+3y+24.$$

$$(iv) \quad 15x^2+34x+15=0.$$

$$(v) \quad x^2+2xy=39, \quad 2y^2-3xy=5.$$

6. A number of two digits is equal to four times the sum of its digits: shew that one digit is double the other.

7. A and B have £70 between them; but if A were to lose half his money, and B were to lose one-quarter of his, they would then have only £43. How much has each?

8. Shew that, when m and n are positive integers, $a^{m+n} \div a^m = a^n$.Find what a^0 and a^{-1} must mean supposing that the above law holds good for all values of m and n .9. Define ratio, and shew that when c is greater than d , and c , d and y are all positive, $c+y : d+y$ is less than $c : d$.Shew that, if $c : d :: x : y$, then will $cd : xy :: c^2 + d^2 : x^2 + y^2$.

10. The first of a series of quantities in arithmetical progression is 3, and the sixth is 18: find the tenth term of the series, and the sum of the first twelve terms.

Find the sum of all the numbers between 200 and 300 which are divisible by 3.

11. Sum the following series:

(i) $5+9+13+\dots$ to 15 terms.(ii) $27-9+3-1+\dots$ to infinity.(iii) $\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \dots$ to 45 terms.

WEDNESDAY, June 10, 1885. 9—11½.

For Candidates under the Old Regulations.

THE GOSPEL ACCORDING TO ST LUKE.

(A)

1. TRANSLATE:

(1) ἐγένετο δὲ ἐν τῷ ἱερατεύειν αὐτὸν ἐν τῇ τάξει τῆς ἡμετέρας αὐτοῦ ἐναντι τοῦ Θεοῦ, κατὰ τὸ ἔθος τῆς ἱερατείας, ἔλαχε τοῦ θυμῆσαι εἰσελθὼν εἰς τὸν ναὸν τοῦ Κυρίου. καὶ πᾶν τὸ πλῆθος τοῦ λαοῦ ἦν προσευχόμενον ἔξω τῇ ᾠρᾷ τοῦ θυμιάματος. ὥφθη δὲ αὐτῷ ἄγγελος Κυρίου ἐστῶς ἐκ δεξιῶν τοῦ θυσιαστηρίου τοῦ θυμιάματος. καὶ ἐταράχθη Ζαχαρίας ἰδὼν, καὶ φόβος ἐπέπεσεν ἐπ' αὐτόν. εἶπε δὲ πρὸς αὐτόν ὁ ἄγγελος, Μὴ φοβοῦ, Ζαχαρία· διότι εἰσηκούσθη ἡ δέησίς σου.

(2) καὶ πορευομένων αὐτῶν ἐν τῇ ὁδῷ εἶπε τις πρὸς αὐτόν, Ἀκολουθήσω σοι ὅπου ἂν ἀπέρχῃ. καὶ εἶπεν αὐτῷ ὁ Ἰησοῦς, Αἱ ἀλώπεκες φωλεοὺς ἔχουσι, καὶ τὰ πετεινὰ τοῦ οὐρανοῦ κατασκηνώσεις· ὁ δὲ υἱὸς τοῦ ἀνθρώπου οὐκ ἔχει ποῦ τὴν κεφαλὴν κλίνει. εἶπε δὲ πρὸς ἕτερον, Ἀκολούθει μοι. ὁ δὲ εἶπε, Κύριε, ἐπίτρεψόν μοι ἀπελθόντι πρῶτον θάψαι τὸν πατέρα μου. εἶπε δὲ αὐτῷ, Ἄφες τοὺς νεκροὺς θάψαι τοὺς ἑαυτῶν νεκρούς· σὺ δὲ ἀπελθὼν διάγγελλε τὴν βασιλείαν τοῦ Θεοῦ.

(3) ἀναβλέψας δὲ εἶδε τοὺς βάλλοντας εἰς τὸ γαζοφυλάκιον τὰ δῶρα αὐτῶν πλουσίους. εἶδε δὲ τινα χήραν πενιχρὰν βάλλουσαν ἐκεῖ δύο λεπτά. καὶ εἶπεν, Ἀληθῶς λέγω ὑμῖν, ὅτι ἡ χήρα ἡ πτωχὴ αὕτη πλείον πάντων ἔβαλεν· πάντες γὰρ οὗτοι ἐκ τοῦ περισσεύοντος αὐτοῖς ἔβαλον εἰς τὰ δῶρα, αὕτη δὲ ἐκ τοῦ ὑστερήματος αὐτῆς πάντα τὸν βίον ὃν εἶχεν ἔβαλε.

2. Translate and explain:

(1) ἐξῆλθε δόγμα παρὰ Καίσαρος Αὐγούστου ἀπογράφεσθαι πᾶσαν τὴν οἰκουμένην.

(2) καὶ αὐτὸς ἦν Ἰησοῦς ἀρχόμενος ὡσεὶ ἐτῶν τριάκοντα.

(3) ἐγένετο δὲ ἐν τῷ συμπληροῦσθαι τὰς ἡμέρας τῆς ἀναλήψεως αὐτοῦ.

(4) τοίνυν ἀπόδοτε τὰ Καίσαρος Καίσαρι καὶ τὰ τοῦ Θεοῦ τῷ Θεῷ.

3. Give an account of the Healing of the Centurion's Servant. How does St Matthew's history of this miracle differ from St Luke's?

4. What do you know of Annas, Capernaum, Emmaus, the Sadducees?

WEDNESDAY, June 10, 1885. 9—11½.

For Candidates under the Old Regulations.

THE GOSPEL ACCORDING TO ST LUKE.

(B)

1. TRANSLATE :

(1) καὶ ἐγένετο ἐν τῇ ὀγδόῃ ἡμέρᾳ, ἦλθον περιτεμεῖν τὸ παιδίον· καὶ ἐκάλουν αὐτὸ ἐπὶ τῷ ὀνόματι τοῦ πατρὸς αὐτοῦ Ζαχαρίαν. καὶ ἀποκριθεῖσα ἡ μήτηρ αὐτοῦ εἶπεν, Οὐχί, ἀλλὰ κληθήσεται Ἰωάννης. καὶ εἶπον πρὸς αὐτὴν ὅτι Οὐδεὶς ἐστὶν ἐκ τῆς συγγενείας σου, ὃς καλεῖται τῷ ὀνόματι τούτῳ. ἐνένευον δὲ τῷ πατρὶ αὐτοῦ, τὸ τί ἂν θέλοι καλεῖσθαι αὐτόν. καὶ αἰτήσας πινακίδιον ἔγραψε λέγων, Ἰωάννης ἐστὶ τὸ ὄνομα αὐτοῦ. καὶ ἐθαύμασαν πάντες.

(2) Σαμαρείτης δὲ τις ὁδεύων ἦλθε κατ' αὐτόν· καὶ ἰδὼν ἐσπλαγχνίσθη, καὶ προσελθὼν κατέδωκε τὰ τραύματα αὐτοῦ ἐπιχέων ἔλαιον καὶ οἶνον, ἐπιβιβάσας δὲ αὐτόν ἐπὶ τὸ ἴδιον κτῆνος ἤγαγεν αὐτόν εἰς πανδοχεῖον, καὶ ἐπεμελήθη αὐτοῦ. καὶ ἐπὶ τὴν αὐρίον ἐκβαλὼν δύο δηνάρια ἔδωκε τῷ πανδοχεῖ, καὶ εἶπεν, Ἐπιμελήθητι αὐτοῦ· καὶ ὃ τι ἂν προσδαπανήσῃς, ἐγὼ ἐν τῷ ἐπανέρχεσθαί με ἀποδώσω σοι. τίς τούτων τῶν τριῶν δοκεῖ σοι πλησίον γεγονέναι τοῦ ἐμπεσόντος εἰς τοὺς ληστάς;

(3) προσέχετε δὲ ἑαυτοῖς, μήποτε βαρυνθῶσιν ὑμῶν αἱ καρδίαι ἐν κραιπάλῃ καὶ μέθῃ καὶ μερίμναις βιωτικαῖς, καὶ αἰφνίδιος ἐφ' ὑμᾶς ἐπιστῇ ἡ ἡμέρα ἐκείνη ὥς παγίς· ἐπεισελεύσεται γὰρ ἐπὶ πάντας τοὺς καθημένους ἐπὶ πρόσωπον πάσης τῆς γῆς. ἀγρυπνεῖτε δὲ ἐν παντὶ καιρῷ δεόμενοι ἵνα κατισχύσητε ἐκφυγεῖν ταῦτα πάντα τὰ μέλλοντα γίνεσθαι, καὶ σταθῆναι ἔμπροσθεν τοῦ υἱοῦ τοῦ ἀνθρώπου.

2. Translate and explain :

(1) ἡγεμονεύοντος Ποντίου Πειλάτου τῆς Ἰουδαίας καὶ τετραρχούντος τῆς Γαλιλαίας Ἡρῴδου.

(2) ἀπελθὼν δεῖξον σεαυτὸν τῷ ἱερεῖ καὶ προσένεγκε περὶ τοῦ καθαρισμοῦ σου καθὼς προσέταξεν Μωσῆς εἰς μαρτύριον αὐτοῖς.

(3) ἐθεώρουν τὸν Σατανᾶν ὡς ἄστραπὴν ἐκ τοῦ οὐρανοῦ πεσόντα.

(4) εἶδεν τοὺς βάλλοντας εἰς τὸ γαζοφυλάκιον τὰ δῶρα αὐτῶν πλουσίους.

3. Give the substance of the "Parable of the Pounds." What parable recorded by St Matthew closely resembles it?

4. What do you know of Caiaphas, Gerasa, Zacchaeus, the Herodians?

WEDNESDAY, *June* 10, 1885. 9—11½.

For Candidates under the New Regulations.

THE GOSPEL ACCORDING TO ST LUKE. (A)

I.

1. WHAT does St Luke say that his purpose was in writing his Gospel? Comment on the term *καθεξῆς* in the Preface.
2. Give the substance of the Song of Mary.
3. Describe the position of the following places: Nazareth, Zarephath, Gerasa. How are they severally mentioned in this Gospel?
4. Give some account of the Mission and Return of the Twelve.
5. Draw a plan shewing the relative positions of Bethphage, the Pool of Siloam, the Valley of the Kedron, Aceldama. Mention any theory you know about the site of the Temple.

II.

1. Translate:

(a) καὶ ἐν τῇ συναγωγῇ ἦν ἄνθρωπος ἔχων πνεῦμα δαιμονίου ἀκαθάρτου, καὶ ἀνέκραξε φωνῇ μεγάλῃ, Ἐα, τί ἡμῖν καὶ σοί, Ἰησοῦ Ναζαρηνέ; ἦλθες ἀπολέσαι ἡμᾶς; οἶδά σε τίς εἶ, ὁ ἅγιος τοῦ Θεοῦ. καὶ ἐπετίμησεν αὐτῷ ὁ Ἰησοῦς λέγων, Φιμώθητι, καὶ ἐξέλθε ἀπ' αὐτοῦ. καὶ ῥίψαν αὐτὸν τὸ δαιμόνιον εἰς τὸ μέσον ἐξῆλθεν ἀπ' αὐτοῦ, μηδὲν βλάψαν αὐτόν. καὶ ἐγένετο θάμβος ἐπὶ πάντας, καὶ συνελάλουν πρὸς ἀλλήλους λέγοντες, Τίς ὁ λόγος οὗτος; ὅτι ἐν ἐξουσίᾳ καὶ δυνάμει ἐπιτάσσει τοῖς ἀκαθάρτοις πνεύμασι, καὶ ἐξέρχονται.

(b) ἐγένετο δὲ ἐν τῷ συμπληροῦσθαι τὰς ἡμέρας τῆς ἀναλήψεως αὐτοῦ, καὶ αὐτὸς τὸ πρόσωπον αὐτοῦ ἐστήριξε τοῦ πορεύεσθαι εἰς Ἱερουσαλήμ, καὶ ἀπέστειλεν ἀγγέλους πρὸ προσώπου αὐτοῦ. καὶ πορευθέντες εἰσῆλθον εἰς κώμην Σαμαρειτῶν, ὥστε ἐτοιμάσαι αὐτῷ. καὶ οὐκ ἐδέξαντο αὐτόν, ὅτι τὸ πρόσωπον αὐτοῦ ἦν πορευόμενον εἰς Ἱερουσαλήμ. ἰδόντες δὲ οἱ μαθηταὶ αὐτοῦ Ἰάκωβος καὶ Ἰωάννης εἶπον, Κύριε, θέλεις εἰπώμεν πῦρ καταβῆναι ἀπὸ τοῦ οὐρανοῦ, καὶ ἀναλῶσαι αὐτούς; στραφεὶς δὲ ἐπετίμησεν αὐτοῖς. καὶ ἐπορεύθησαν εἰς ἑτέραν κώμην.

(c) ἄνθρωπός τις εὐγενὴς ἐπορεύθη εἰς χώραν μακράν, λαβεῖν ἐαυτῷ βασιλείαν, καὶ ὑποστρέψαι. καλέσας δὲ δέκα δούλους ἐαυτοῦ ἔδωκεν αὐτοῖς δέκα μῶας, καὶ εἶπε πρὸς αὐτούς, Πραγματεύσασθε ἕως ἔρχομαι. οἱ δὲ πολῖται αὐτοῦ ἐμίσουν αὐτόν, καὶ ἀπέστειλαν πρεσβείαν ὀπίσω αὐτοῦ λέγοντες, Οὐ θέλομεν τοῦτον βασιλεῦσαι ἐφ' ἡμᾶς. καὶ ἐγένετο ἐν τῷ ἐπανελθεῖν αὐτὸν λαβόντα τὴν βασιλείαν, καὶ εἶπε φωνηθῆναι αὐτῷ τοὺς δούλους τούτους, οἷς δέδωκε τὸ ἀργύριον, ἵνα γνῶ τί διεπραγματεύσαντο.

2. Translate and explain, giving the context in each case :

(a) μηδένα διασείσητε, μηδὲ συκοφαντήσητε· καὶ ἀρκείσθε τοῖς ὀψωνίοις ὑμῶν.

(b) καὶ εἶπεν ὁ νεώτερος αὐτῶν τῷ πατρί, Πάτερ, δός μοι τὸ ἐπιβάλλον μέρος τῆς οὐσίας. ὁ δὲ διείλεν αὐτοῖς τὸν βίον.

(c) ὅταν δὲ ἴδῃτε κυκλουμένην ὑπὸ στρατοπέδων τὴν Ἱερουσαλήμ, τότε γνῶτε ὅτι ἤγγικεν ἡ ἐρήμωσις αὐτῆς.

(d) ὥς ἐπὶ ληστὴν ἐξήλθετε μετὰ μαχαιρῶν καὶ ξύλων;

WEDNESDAY, June 10, 1885. 9—11½.

For Candidates under the New Regulations.

THE GOSPEL ACCORDING TO ST LUKE.

(B)

I.

1. WHAT does St Luke say his qualifications were for writing a Gospel? Comment on the phrase *περὶ τῶν πεπληροφορημένων ἐν ἡμῖν πραγμάτων* in the Preface.

2. Give the substance of the Song of Zacharias.

3. Describe the position of the following places: Capernaum, Nineveh, Nain. How are they severally mentioned in this Gospel?

4. Give some account of the Mission and Return of the Seventy.

5. Draw a plan shewing the relative positions of Bethany, the Mount of Olives, the Valley of Hinnom, the Tower of Antonia. Mention any theory you know about the position of Calvary.

II.

1. Translate:

(a) πάντως ἐρεῖτέ μοι τὴν παραβολὴν ταύτην, Ἰατρέ, θεράπευσον σεαυτόν· ὅσα ἠκούσαμεν γενόμενα εἰς τὴν Καπερναοὺμ, ποιήσον καὶ ὧδε ἐν τῇ πατρίδι σου. εἶπε δέ, Ἀμὴν λέγω ὑμῖν, ὅτι οὐδεὶς προφήτης δεκτός ἐστιν ἐν τῇ πατρίδι αὐτοῦ. ἐπ' ἀληθείας δὲ λέγω ὑμῖν, πολλαὶ χῆραι ἦσαν ἐν ταῖς ἡμέραις Ἑλίου ἐν τῷ Ἰσραὴλ, ὅτε ἐκλείσθη ὁ οὐρανὸς ἐπὶ ἔτη τρία καὶ μῆνας ἕξ, ὥς ἐγένετο λιμὸς μέγας ἐπὶ πάσαν τὴν γῆν· καὶ πρὸς οὐδεμίαν αὐτῶν ἐπέμφθη Ἑλίας, εἰ μὴ εἰς Σάρεπτα τῆς Σιδωνίας πρὸς γυναῖκα χήραν.

(b) γυνὴ δέ τις ὀνόματι Μάρθα ὑπεδέξατο αὐτὸν εἰς τὸν οἶκον αὐτῆς. καὶ τῇδε ἦν ἀδελφὴ καλουμένη Μαρία, ἣ καὶ παρακαθισθεῖσα πρὸς τοὺς πόδας τοῦ Κυρίου ἤκουε τὸν λόγον αὐτοῦ. ἡ δὲ Μάρθα περισπᾶτο περὶ πολλὴν διακονίαν· ἐπιστᾶσα δὲ εἶπε, Κύριε, οὐ μέλει σοι ὅτι ἡ ἀδελφὴ μου μόνην με κατέλειπε διακονεῖν; εἰπὲ οὖν αὐτῇ ἵνα μοι συναντιλάβηται. ἀποκριθεὶς δὲ εἶπεν αὐτῇ ὁ Κύριος, Μάρθα, Μάρθα, μεριμνᾷς καὶ θορυβάζῃ περὶ πολλά· ἐνὸς δὲ ἐστὶ χρεία· Μαρία γὰρ τὴν ἀγαθὴν μερίδα ἐξελέξατο, ἣτις οὐκ ἀφαιρεθήσεται ἀπ' αὐτῆς.

(c) κριτὴς τις ἦν ἐν τινὶ πόλει τὸν Θεὸν μὴ φοβούμενος καὶ ἄνθρωπον μὴ ἐντρέπόμενος. χήρα δὲ ἦν ἐν τῇ πόλει ἐκείνῃ, καὶ ἤρχετο πρὸς αὐτὸν λέγουσα, Ἐκδίκησόν με ἀπὸ τοῦ ἀντιδίκου μου. καὶ οὐκ ἤθελεν ἐπὶ χρόνον· μετὰ δὲ ταῦτα εἶπεν ἐν ἑαυτῷ, Εἰ καὶ τὸν Θεὸν οὐ φοβοῦμαι οὐδὲ ἄνθρωπον ἐντρέπομαι, διὰ γε τὸ παρέχειν μοι κόπον τὴν χήραν ταύτην ἐκδικήσω αὐτήν, ἵνα μὴ εἰς τέλος ἐρχομένη ὑπωπιάζῃ με. εἶπε δὲ ὁ Κύριος, Ἀκούσατε τί ὁ κριτὴς τῆς ἀδικίας λέγει.

2. Translate and explain, giving the context in each case:

(a) καὶ πτύξας τὸ βιβλίον, ἀποδοὺς τῷ ὑπηρέτῃ, ἐκάθισε.

(b) δέξαι σου τὰ γράμματα, καὶ γράψον ὀγδοήκοντα.

(c) καὶ πεσοῦνται στόματι μαχαίρας, καὶ αἰχμαλωτισθήσονται εἰς πάντα τὰ ἔθνη· καὶ Ἰερουσαλὴμ ἔσται πατουμένη ὑπὸ ἐθνῶν.

(d) ὅτε ἀπέστειλα ὑμᾶς ἄτερ βαλαντίου καὶ πήρας καὶ ὑποδημάτων, μή τις υστερήσῃ;

WEDNESDAY, June 10, 1885. 9—11½.

PLATO APOLOGIA.

I.

(i) WRITE a short account of the life of Socrates, giving any (a) *political*, (b) *military* incidents in it to which he refers in his defence.

(ii) What were the charges brought against Socrates in Court? How does Socrates reply to them?

(iii) οὐ πείσεσθέ μοι ὡς εἰρωνευομένην.

To what feature in his teaching does Socrates allude? Give any instances of it you remember occurring in the Apologia.

(iv) ἐν τῇ Ἀριστοφάνους κωμῳδίᾳ.

To what play does Socrates allude? Against whom was it specially aimed, and why was Socrates included? How was he represented there?

II.

(1) Translate into ENGLISH:

(a) αἰσχύνομαι οὖν ὑμῖν εἰπεῖν, ὦ ἄνδρες, τὰ ληθῆ ὁμῶς δὲ ῥητέον. ὥς ἔπος γὰρ εἰπεῖν ὀλίγου αὐτῶν ἅπαντες οἱ παρόντες ἂν βέλτιον ἔλεγον περὶ ὧν αὐτοὶ ἐπεποιήκεσαν. ἔγνω οὖν καὶ περὶ τῶν ποιητῶν ἐνὶ λόγῳ τοῦτο, ὅτι οὐ σοφία ποιοῖεν ἃ ποιοῖεν, ἀλλὰ φύσει τινὶ καὶ ἐνθουσιάζοντες, ὥσπερ οἱ θεομάντεις καὶ οἱ χρησμοδοί· καὶ γὰρ οὗτοι λέγουσι μὲν πολλὰ καὶ καλά, ἴσασι δὲ οὐδὲν ὧν λέγουσι.

Parse ποιοῖεν—ἴσασι.

(b) πρὸς αὐτῶν τοίνυν, ὦ Μέλητε, τούτων τῶν θεῶν, ὧν νῦν ὁ λόγος ἐστίν, εἰπὲ ἔτι σαφέστερον καὶ ἐμοὶ καὶ τοῖς ἀνδράσι τουτοισί. ἐγὼ γὰρ οὐ δύναμαι μαθεῖν, πότερον λέγεις διδάσκειν με νομίζειν εἶναι τινος θεοῦ, καὶ αὐτὸς ἄρα νομίζω εἶναι θεοῦ, καὶ οὐκ εἰμὶ τὸ παράπαν ἄθεος οὐδὲ ταύτῃ ἀδικῶ, οὐ μέντοι οὐσπερ γε ἡ πόλις, ἀλλ' ἐτέρους, καὶ τοῦτ' ἔστιν ὃ μοι ἐγκαλεῖς, ὅτι ἐτέρους ἢ παντάπασί με φῆς οὔτε αὐτὸν νομίζειν θεοῦ τούς τε ἄλλους ταῦτα διδάσκειν. ταῦτα λέγω, ὥς τὸ παράπαν οὐ νομίζεις θεοῦ. ὦ θαυμάσιε Μέλητε, ἵνα τί ταῦτα λέγεις; οὐδὲ ἥλιον οὐδὲ σελήνην ἄρα νομίζω θεοῦ εἶναι, ὥσπερ οἱ ἄλλοι ἄνθρωποι; Μὰ Δί', ὦ ἄνδρες δικασταί, ἐπεὶ τὸν μὲν ἥλιον λίθον φησὶν εἶναι, τὴν δὲ σελήνην γῆν.

Under what names were ἥλιος and σελήνη personified in Greek mythology?

(c) τὸ μὲν μὴ ἀγανακτεῖν, ὃ ἄνδρες Ἀθηναῖοι, ἐπὶ τούτῳ τῷ γεγονότι, ὅτι μου κατεψηφίσασθε, ἀλλὰ τέ μοι πολλὰ ξυμβάλλεται, καὶ οὐκ ἀνέλπιστόν μοι γέγονε τὸ γεγονὸς τοῦτο, ἀλλὰ πολὺ μᾶλλον θαυμάζω ἐκατέρων τῶν ψήφων τὸν γεγονότα ἀριθμόν. οὐ γὰρ ᾤμην ἔγωγε οὕτω παρ' ὑλίγον ἔσεσθαι, ἀλλὰ παρὰ πολὺ νῦν δέ, ὥς ἔοικεν, εἰ τριάκοντα μόναι μετέπεσον τῶν ψήφων, ἀποπεφεύγη ἄν.

Parse ἀποπεφεύγη. What is the literal meaning of ψήφος, and how comes it to be used as it is here?

(d) ἀλλὰ μὴ οὐ τοῦτ' ἢ χαλεπὸν, ὃ ἄνδρες, θάνατον ἐκφυγεῖν, ἀλλὰ πολὺ χαλεπώτερον πονηρίαν· θάττον γὰρ θανάτου θεῖ. καὶ νῦν ἐγὼ μὲν ἄτε βραδὺς ὢν καὶ πρεσβύτερος ὑπὸ τοῦ βραδυτέρου ἐάλων, οἱ δ' ἐμοὶ κατήγοροι ἄτε δεινοὶ καὶ ὀξεῖς ὄντες ὑπὸ τοῦ θάττονος, τῆς κακίας. καὶ νῦν ἐγὼ μὲν ἄπειμι ὑφ' ὑμῶν θανάτου δίκην ὄφλων, οὗτοι δ' ὑπὸ τῆς ἀληθείας ὠφληκότες μοχθηρίαν καὶ ἀδικίαν. καὶ ἐγὼ τε τῷ τιμήματι ἐμμένω καὶ οὗτοι.

Parse θεῖ—ἐάλων—ὠφληκότες.

(2) Translate and explain the following phrases :

τὰ μετέωρα—μεταπεμφάμενοί με πέμπτον αὐτόν—φυγῆς τιμήσωμαι;—
τὸν ἐπὶ Τροίαν ἄγοντα τὴν πολλὴν στρατιάν.

WEDNESDAY, June 10, 1885. 1—3½.

CAESAR DE BELLO GALLICO IV, V.

(A)

For Candidates under the Old Regulations.

1. WHAT do you know of Ariovistus? State the geographical position of Illyricum, the Aedui, the Menapii.

2. Translate :

Re frumentaria comparata equitibusque delectis iter in ea loca facere coepit, quibus in locis esse Germanos audiebat. A quibus cum paucorum dierum iter abesset, legati ab his venerunt, quorum haec fuit oratio: Germanos neque priores populo Romano bellum inferre neque tamen recusare, si lacessantur, quin armis contendant, quod Germanorum consuetudo haec sit a maioribus tradita, quicunque bellum inferant, resistere neque deprecari. Haec tamen dicere, venisse invitos, eiectos domo; si suam gratiam Romani velint, posse iis utiles esse amicos; vel sibi agros attribuant vel patiantur eos tenere, quos armis possederint: sese unis Suebis concedere, quibus ne dii quidem immortales pares esse possint; reliquum quidem in terris esse neminem, quem non superare possent.

Put into Oratio Directa:—vel sibi agros attribuant vel patiantur eos tenere, quos armis possederint: sese unis Suebis concedere, quibus ne dii quidem immortales pares esse possint.

3. Translate :

His rebus gestis Labieno in continente cum tribus legionibus et equitum milibus duobus relicto, ut portus tueretur et rem frumentariam provideret, quaeque in Gallia gererentur cognosceret consiliumque pro tempore et pro re caperet, ipse cum quinque legionibus et pari numero equitum, quem in continenti reliquerat, ad solis occasum naves solvit et leni Africo proventus media circiter nocte vento intermisso cursum non tenuit et longius delatus aestu orta luce sub sinistra Britanniam relictam conspexit. Tum rursus aestus commutationem secutus remis contendit, ut eam partem insulae caperet, qua optimum esse egressum superiore aestate cognoverat. Qua in re admodum fuit militum virtus laudanda, qui vectoriis gravibusque navigiis non intermisso remigandi labore longarum navium cursum adaequarunt.

Parse fully *portus*, *provectus*.

4. Translate :

Septimo oppugnationis die maximo coorto vento ferventes fusili ex argilla glandes fundis et fervefacta iacula in casas, quae more Gallico stramentis erant tectae, iacere coeperunt. Hae celeriter ignem comprehenderunt et venti magnitudine in omnem locum castrorum distulerunt. Hostes maximo clamore sicuti parta iam atque explorata victoria turres testudinesque agere et scalis vallum ascendere coeperunt. At tanta militum virtus atque ea praesentia animi fuit, ut, cum ubique flamma torrerentur maximaque telorum multitudine premerentur suaeque omnia impedimenta atque omnes fortunas conflagrare intellegerent, non modo demigrandi causa de vallo decederet nemo, sed paene ne respiceret quidem quisquam, ac tum omnes acerrime fortissimeque pugnarent.

5. In what senses does Caesar use *temere*, *proinde*? Explain *cohors*, *stipendium*, *annotinae*. Explain the Roman reckoning of time by hours.

6. Translate so as to shew clearly the force of the italicized words :

- (a) Uxores habent *deni duodenique* inter se communes.
- (b) Praecipuo eos honore habuit *pro* vetere ac perpetua erga populum Romanum fide.
- (c) Hoc unum *ad* pristinam fortunam Caesari defuit.
- (d) *In* orbem consistere.

Point out anomalies of construction in :

- (e) Diebus circiter XV quibus in hiberna ventum est.
- (f) Post diem IV quam est in Britanniam ventum.

WEDNESDAY, June 10, 1885. 1—3½.

CAESAR DE BELLO GALLICO IV, V.

(B)

For Candidates under the Old Regulations.

1. WHAT do you know of Q. Cicero? State the geographical position of the *silva Arduenna*, the Usipetes, the Eburones.

2. Translate:

Caesar cum ab hoste non amplius passuum XII milibus abesset, ut erat constitutum ad eum legati revertuntur; qui in itinere congressi magnopere ne longius progredieretur orabant. Cum id non inpetrassent, petebant, uti ad eos equites, qui agmen antecessissent, praemitteret eosque pugna prohiberet, sibi ut potestatem faceret in Ubios legatos mittendi; quorum si principes ac senatus sibi iureiurando fidem fecisset, ea condicione, quae a Caesare ferretur, se usuros ostendebant: ad has res conficiendas sibi tridui spatium daret. Haec omnia Caesar eodem illo pertinere arbitrabatur, ut tridui mora interposita equites eorum, qui abessent, reverterentur: tamen sese non longius milibus passuum quattuor aquationis causa processurum eo die dixit; huc postero die quam frequentissimi convenirent, ut de eorum postulatis cognosceret.

Put into Oratio Directa:—sese non longius milibus passuum quattuor aquationis causa processurum eo die; huc postero die quam frequentissimi convenirent, ut de eorum postulatis cognosceret.

3. Translate:

Genus hoc est ex essedis pugnae. Primo per omnes partes perequitant et tela coniciunt atque ipso terrore equorum et strepitu rotarum ordines plerumque perturbant, et cum se inter equitum turmas insinuaverunt, ex essedis desiliunt et pedibus proeliantur. Aurigae interim paulatim ex proelio excedunt atque ita currus conlocant, ut, si illi a multitudine hostium premantur, expeditum ad suos receptum habeant. Ita mobilitatem equitum, stabilitatem peditum in proeliis praestant, ac tantum usu cotidiano et exercitatione efficiunt, uti in declivi ac praecipiti loco incitatos equos sustinere et brevi moderari ac flectere et per temonem percurrere et in iugo insistere et se inde in currus citissime recipere consuerint.

Parse fully *premantur*, *temonem*.

4. Translate:

Quibus omnibus rebus hostes invitati copias traducunt aciemque iniquo loco constituunt, nostris vero etiam de vallo deductis propius accedunt et tela intra munitionem ex omnibus partibus coniciunt praeconibusque circummissis pronuntiari iubent, seu quis Gallus seu Romanus velit ante horam tertiam ad se transire, sine periculo licere; post id tempus non fore potestatem: ac sic nostros contempserunt, ut obstructis in speciem portis singulis ordinibus cespitem, quod ea non posse introrumpere videbantur, alii vallum manu scindere, alii fossas complere inciperent. Tum Caesar omnibus portis eruptione facta equitatuque emissio celeriter hostes in fugam dat, sic uti omnino pugnandi causa resisteret nemo, magnumque ex eis numerum occidit atque omnes armis exuit.

5. In what senses does Caesar use *ultra*, *praesertim cum*? Explain *supplicatio*, *actuariae*, *conventus*. Explain the Roman division of the day into watches.

6. Translate so as to show clearly the force of the italicized words:

- (a) *Tigna bina* sesquipedalia intervallo pedum duorum inter se iungebat.
- (b) *De* tertia vigilia.
- (c) *In* silvas se abdiderant.
- (d) Orabat *pro* hospitio ut suae saluti consuleret.

Point out anomalies of construction in:

- (e) Naves circiter DC eius generis cuius supra demonstravimus.
- (f) Post diem tertium.

WEDNESDAY, June 10, 1885. 1—3½.

CAESAR DE BELLO GALLICO IV. V.

(A)

For Candidates under the New Regulations.

I.

1. TRANSLATE:

Re frumentaria comparata equitibusque delectis iter in ea loca facere coepit, quibus in locis esse Germanos audiebat. A quibus cum paucorum dierum iter abesset, legati ab his venerunt, quorum haec fuit oratio; Germanos neque priores populo Romano bellum inferre neque tamen recusare, si lacessantur, quin armis contendant, quod Germanorum consuetudo haec sit a maioribus tradita, quicumque bellum inferant, resistere neque deprecari. Haec tamen dicere, venisse invitos, eiectos domo; si suam gratiam Romani velint, posse iis utiles esse amicos; vel sibi agros attribuant vel patiantur eos tenere, quos armis possederint: sese unis Suebis concedere, quibus ne dii quidem immortales pares esse possent; reliquum quidem in terris esse neminem, quem non superare possint.

Put into Oratio Directa:—vel sibi agros attribuant vel patiantur eos tenere, quos armis possederint: sese unis Suebis concedere, quibus ne dii quidem immortales pares esse possent.

2. Translate :

His rebus gestis Labieno in continente cum tribus legionibus et equitum milibus duobus relicto, ut portus tueretur et rem frumentariam provideret quaeque in Gallia gererentur cognosceret consiliumque pro tempore et pro re caperet, ipse cum quinque legionibus et pari numero equitum, quem in continenti reliquerat, ad solis occasum naves solvit et leni Africo proventus media circiter nocte vento intermisso cursum non tenuit et longius delatus aestu orta luce sub sinistra Britanniam relictam conspexit. Tum rursus aestus commutationem secutus remis contendit, ut eam partem insulae caperet, qua optimum esse egressum superiore aestate cognoverat. Qua in re admodum fuit militum virtus laudanda, qui vectoriis gravibusque navigiis non intermisso remigandi labore longarum navium cursum adaequarunt.

Parse fully *portus*, *proventus*.

3. Translate :

Septimo oppugnationis die maximo coorto vento ferventes fusili ex argilla glandes fundis et fervefacta iacula in casas, quae more Gallico stramentis erant tectae, iacere coeperunt. Hae celeriter ignem comprehenderunt et venti magnitudine in omnem locum castrorum distulerunt. Hostes maximo clamore sicuti *parta* iam atque explorata victoria turres testudinesque agere et scalis vallum ascendere coeperunt. At tanta militum virtus atque ea praesentia animi fuit, ut, cum ubique flamma torrerentur maximaque telorum multitudine premerentur suaeque omnia impedimenta atque omnes fortunas conflagrare intellegerent, non modo demigrandi causa de vallo decederet nemo, sed paene ne respiceret quidem quisquam, ac tum omnes acerrime fortissimeque pugnarent.

4. Translate so as to shew clearly the force of the italicized words :

- (a) *Uxores habent deni duodenique* inter se communes.
- (b) Praecipuo eos honore habuit *pro* vetere ac perpetua erga populum Romanum fide.
- (c) Hoc unum *ad* pristinam fortunam Caesari defuit.
- (d) *In* orbem consistere.

II.

1. What was the date of Caesar's first campaign in Britain? What were Caesar's expressed objects in undertaking it?

2. Draw a map to illustrate the region of the Gallic revolt described in the Fifth Book. Mark the positions of the several Roman camps, and give the ancient names of rivers and tribes with any modern names which recall those given by Caesar.

3. Give in substance Caesar's description of the inhabitants of Britain.

4. Explain the constitution of the Roman legion, and the meaning of *primus pilus*, *ordines*, *tribunus militum*.

WEDNESDAY, June 10, 1885. 1—3½.

CAESAR DE BELLO GALLICO, IV. V.

(B)

For Candidates under the New Regulations.

I.

1. TRANSLATE:

Caesar cum ab hoste non amplius passuum XII milibus abesset, ut erat constitutum, ad eum legati revertuntur; qui in itinere congressi magno opere, ne longius progrediretur, orabant. Cum id non impetrassent, petebant, uti ad eos equites, qui agmen antecessissent, praemitteret eosque pugna prohiberet, sibi ut potestatem faceret in Ubios legatos mittendi; quorum si principes ac senatus sibi iureiurando fidem fecisset, ea condicione, quae a Caesare ferretur, se usuros ostendebant: ad has res conficiendas sibi tridui spatium daret. Haec omnia Caesar eodem illo pertinere arbitrabatur, ut tridui mora interposita equites eorum, qui abessent, reverterentur; tamen sese non longius milibus passuum quattuor aquationis causa processurum eo die dixit: huc postero die quam frequentissimi convenirent, ut de eorum postulatis cognosceret.

Put into Oratio Directa:—sese non longius milibus passuum quattuor aquationis causa processurum eo die: huc postero die quam frequentissimi convenirent, ut de eorum postulatis cognosceret.

2. Translate:

Genus hoc est ex essedis pugnae. Primo per omnes partes perequitant et tela coniciunt atque ipso terrore equorum et strepitu rotarum ordines plerumque perturbant, et cum se inter equitum turmas insinuaverunt, ex essedis desiliunt et pedibus proeliantur. Aurigae interim paulatim ex proelio excedunt atque ita currus collocant, ut, si illi a multitudine hostium premantur, expeditum ad suos receptum habeant. Ita mobilitatem equitum, stabilitatem peditum in proeliis praestant, ac tantum usu cotidiano et exercitatione efficiunt, uti in declivi ac praecipiti loco incitatos equos sustinere et brevi moderari ac flectere et per temonem percurrere et in iugo insistere et se inde in currus citissime recipere consuerint.

Parse fully *premantur*, *temonem*.

3. Translate:

Quibus omnibus rebus hostes invitati copias traducunt aciemque iniquo loco constituunt, nostris vero etiam de vallo deductis propius accedunt et tela intra munitionem ex omnibus partibus coniciunt praeconibusque circummissis pronuntiari iubent, seu quis Gallus seu Romanus velit ante horam tertiam ad se transire, sine periculo licere; post id tempus non fore potestatem: ac sic nostros contemperunt, ut obstructis in speciem portis singulis ordinibus cespitem, quod ea non posse introrumpere videbantur, alii vallum manu scindere, alii fossas complere inciperent. Tum Caesar omnibus portis eruptione facta equitatuque emissio celeriter hostes in fugam dat, sic uti omnino pugnandi causa resisteret nemo, magnumque ex eis numerum occidit atque omnes armis exuit.

4. Translate so as to show clearly the force of the italicized words:

- (a) *Tigna bina sesquipedalia intervallo pedum duorum inter se iungebat.*
- (b) *De tertia vigilia.*
- (c) *In silvas se abdiderant.*
- (d) *Orabat pro hospitio ut suae salutis consuleret.*

II.

1. Who were consuls in the year of Caesar's first campaign in Britain? What were their relations with Caesar at the time?

2. Draw a map to illustrate Caesar's campaign in the neighbourhood of the Rhine, giving the ancient names of rivers, mountains, tribes &c. and marking any towns &c. whose modern names recall those given by Caesar.

3. Give in substance Caesar's account of the geography and natural features of Britain.

4. Explain the Roman method of reckoning time in *hours* and *watches*.

THURSDAY, June 11, 1885. 9—11½.

For Candidates under the old Regulations.

HOMER, ILIAD, XXI. XXII.

(A)

a. TRANSLATE:

- (1) ἔνθ' υἱεὶ Πριάμοιο συνήντετο Δαρδανίδαο
 ἐκ ποταμοῦ φεύγοντι, Λυκάονι, τὸν ῥά ποτ' αὐτὸς
 ἤγε λαβὼν ἐκ πατρὸς ἀλωῆς οὐκ ἐθέλοντα,
 ἐννύχιος προμολὼν ὃ δ' ἐρινεὸν ὀξείῃ χαλκῷ
 τάμνε νέους ὄρηκας, ἵν' ἄρματος ἄντυγες εἶεν·
 τῷ δ' ἄρ' ἀνώϊστον κακὸν ἤλυθε δῖος Ἀχιλλεύς.
 καὶ τότε μὲν μιν Λῆμνον εὐκτιμένην ἐπέρασσεν
 νηυσὶν ἄγων, ἀτὰρ υἱὸς Ἰήσονος ὦνον ἔδωκεν·
 κείμενος δὲ ξείνός μιν ἐλύσατο, πολλὰ δ' ἔδωκεν,
 Ἴμβριος Ἡετίων, πέμψεν δ' ἐς δῖαν Ἀρίσβην·
 ἔνθεν ὑπεκπροφυγὼν πατρώϊον ἵκετο δῶμα.

Explain the construction of ἐρινεόν, ὄρηκας.

- (2) ὥς ἄρ' ἔφη, Λητὼ δὲ συναίνυτο καμπύλα τόξα
 πεπτεῶτ' ἄλλυδις ἄλλα μετὰ στροφάλιγγι κονίης.
 ἢ μὲν τόξα λαβοῦσα πάλιν κίε θυγατέρος ἦς·
 ἢ δ' ἄρ' Ὀλυμπον ἴκανε, Διὸς ποτὶ χαλκοβατὲς δῶ,
 δακρυόεσσα δὲ πατρὸς ἐφέζετο γούνασι κούρη,
 ἀμφὶ δ' ἄρ' ἀμβρόσιος ἑάνος τρέμε· τὴν δὲ προτὶ οἱ
 εἶλε πατὴρ Κρονίδης, καὶ ἀνείρετο ἡδὺ γελάσσας
 τίς νύ σε τοιάδ' ἔρεξε, φίλον τέκος, Οὐρανιῶνων
 μαψιδίως, ὥσεί τι κακὸν ῥέζουσιν ἐνώπῃ;

Parse πεπτεῶτα, εἶλε, γελάσσας.

- (3) ἦν τε κίρκος ὄρεσφιν, ἐλαφρότατος πετεηνῶν,
 ῥῆιδίως οἴμῃσε μετὰ τρήρωνα πέλειαν·
 ἢ δέ θ' ὕπαιθα φοβεῖται, ὃ δ' ἐγγύθεν ὀξὺ λεληκῶς
 ταρφέ' ἐπαῖσσει, ἐλέειν τέ ἐ θυμὸς ἀνώγει·
 ὥς ἄρ' ὄγ' ἐμμεμαῶς ἰθὺς πέτετο, τρέσε δ' Ἑκτωρ
 τεῖχος ὑπο Τρώων, λαιψήρᾳ δὲ γούνατ' ἐνώμα.

What difference of meaning would ὑπὸ have with a dative here?

- (4) ἦ ῥα καὶ Ἑκτορα δῖον ἀεικέα μῆδετο ἔργα.
 ἀμφοτέρων μετόπισθε ποδῶν τέτρηνε τένοντε
 ἐς σφυρὸν ἐκ πτέρνης, βοέους δ' ἐξῆπτεν ἱμάντας,
 ἐκ δίφροιο δ' ἔδησε, κάρη δ' ἔλκεσθαι ἔασεν
 ἐς δίφρον δ' ἀναβάς, ἀνά τε κλυτὰ τεύχε' αἶερας,
 μᾶστιξέν ῥ' ἐλάαν, τὼ δ' οὐκ ἄκοντε πετέσθην.
 τοῦ δ' ἦν ἐλκομένοιο κονίσαλος, ἀμφὶ δὲ χαῖται
 κνάνειαι πίτναντο, κάρη δ' ἅπαν ἐν κονίῃσιν
 κεῖτο πάρος χαρίεν· τότε δὲ Ζεὺς δυσμενέεσσιν
 δῶκεν ἀεικίσσασθαι ἐῖν ἐν πατρίδι γαίῃ.

Explain the construction of ἐλάαν.

b. Translate:

- (1) εἴ τοι Τρῶας ἔδωκε Κρόνου παῖς πάντας ὀλέσσαι,
 ἐξ ἐμέθεν γ' ἐλάσας πεδῖον κάτα μέρμερα ῥέζε.

Who is the speaker here? Who was Κρόνου παῖς?

Parse ὀλέσσαι, ἐμέθεν, ἐλάσας.

- (2) νέφ δέ τε πάντ' ἐπέοικεν,
 ἀρηικταμένφ, δεδαῖγμένφ ὀξεί χαλκῷ
 κεῖσθαι πάντα δὲ καλὰ θανόντι περ, ὅττι φανήῃ.

Parse ἐπέοικεν, δεδαῖγμένφ, φανήῃ.

- (3) κεῖται παρ νήεσσι νέκυσ ἄκλαυτος, ἄθαπτος
 Πάτροκλος· τοῦ δ' οὐκ ἐπιλήσομαι, ὄφρ' ἂν ἐγὼ γε
 ζῳοῖσιν μετέω καί μοι φίλα γούνατ' ὀρώρῃ.

What were the circumstances attending the death of Patroklos?

Give the Attic forms of νήεσσι, μετέω, γούνατα.

THURSDAY, June 11, 1885. 9—11½.

For Candidates under the old Regulations.

HOMER, ILIAD, XXI. XXII.

(B)

a. TRANSLATE:

- (1) νήπιε, μή μοι ἄποινα πιφαύσκεο μηδ' ἀγόρευε·
 πρὶν μὲν γὰρ Πάτροκλον ἐπισπεῖν αἰσιμον ἡμαρ,
 τόφρα τί μοι πεφιδέσθαι ἐνὶ φρεσὶ φίλτερον ἦεν
 Τρώων, καὶ πολλοὺς ζωοὺς ἔλον ἡδ' ἐπέρασσα·
 νῦν δ' οὐκ ἔσθ' ὅστις θάνατον φύγη, ὃν κε θεὸς γε
 Ἰλίου προπάρειθεν ἐμῆς ἐν χερσὶ βάλησιν,
 καὶ πάντων Τρώων, πέρι δ' αὖ Πριάμοιο γε παίδων.
 ἀλλὰ, φίλος, θάνε καὶ σὺ τῇ ὀλοφύρεαι οὕτως;
 κάτθανε καὶ Πάτροκλος, ὅπερ σέο πολλὸν ἀμείνων.
 οὐχ ὀράας οἶος καὶ ἐγὼ καλὸς τε μέγας τε;
 πατρός δ' εἴμ' ἀγαθοῖο, θεὰ δέ με γείνατο μήτηρ·
 ἀλλ' ἔπι τοι καὶ ἐμοὶ θάνατος καὶ μοῖρα κραταιή.

Parse πεφιδέσθαι. Explain the construction of φύγη.

- (2) ὥς εἰπὼν Ἀχιλλῆα ἀλεις μένεν, ἐν δέ οἱ ἦτορ
 ἄλκιμον ὥρμᾶτο πτολεμίζειν ἡδὲ μάχεσθαι.
 ἥντε πάρδαλις εἰσι βαθείης ἐκ ξυλόχοιο
 ἀνδρὸς θηρητῆρος ἐναντίον, οὐδέ τι θυμῷ
 ταρβεῖ οὐδὲ φοβεῖται, ἐπεὶ κεν ὑλαγμὸν ἀκούσῃ·
 εἵπερ γὰρ φθάμενός μιν ἦ οὐτάσῃ, ἡὲ βάλησιν,
 ἀλλὰ τε καὶ περὶ δουρὶ πεπαρμένη οὐκ ἀπολήγει
 ἀλκῆς, πρὶν γ' ἡὲ ξυμβλήμεναι, ἡὲ δαμῆναι.

Parse εἰσι, φθάμενος, ξυμβλήμεναι.

- (3) Ἑκτορα δ' ἀσπερχές κλονέων ἔφεπ' ὥκυν Ἀχιλλεύς.
 ὥς δ' ὅτε νεβρὸν ὄρεσφι κύων ἐλάφοιο δίηται,
 ὄρσας ἐξ εὐνῆς, διὰ τ' ἄγχεα καὶ διὰ βήσσας·
 τὸν δ' εἵπερ τε λάθῃσι καταπτῆξας ὑπὸ θάμνῳ,
 ἀλλὰ τ' ἀνιχνεύων θέει ἔμπεδον, ὅφρα κεν εὕρῃ.
 ὥς Ἑκτωρ οὐ λήθε ποδώκεα Πηλεΐωνα.

What difference of meaning would ὑπὸ have with an accusative here?

- (4) σχέσθε, φίλοι, καί μ' ὅλον εἰσάτε, κηδόμενοι περ,
 ἐξελθόντα πόλῃος ἰκέσθ' ἐπὶ νῆας Ἀχαιῶν,
 λίσσωμ' ἀνέρα τοῦτον ἀτάσθαλον ὀβριμοεργόν,
 ἦν πως ἡλικίην αἰδέσσεται ἡδ' ἐλεήσει
 γῆρας. καὶ δέ νυ τῷδε πατὴρ τοιόσδε τέτυκται,
 Πηλεὺς, ὃς μιν ἔτικτε καὶ ἔτρεφε πῆμα γενέσθαι
 Τρῳσί· μάλιστα δ' ἐμοὶ περὶ πάντων ἄλγε' ἔθηκεν
 τόσσους γὰρ μοι παῖδας ἀπέκτανε τηλεθάοντας
 τῶν πάντων οὐ τόσσον οὐδύρομαι, ὑχνύμενός περ,
 ὥς ἐνός, οὐ μ' ἄχος ὅζ' ὑ κατοίσεται Ἄϊδος εἴσω,
 Ἔκτορος· ὥς ὄφελεν θανέειν ἐν χερσὶν ἐμῇσιν.

Explain the construction of γενέσθαι.

b. Translate:

- (1) τοῦ μέν τε προρέοντος ὑπὸ ψηφίδες ἅπασαι
 ὀχλεῦνται· τὸ δέ τ' ὅκα κατειβόμενον κελαρύζει
 χώρῳ ἐνὶ προαλεί, φθάνει δέ τε καὶ τὸν ἄγοντα.

Of what simile are these lines a part?

Parse ψηφίδες, προαλεί, ὀχλεῦνται.

- (2) ἦ νύ τοι οὐ τι μέλει Τρώων πόνος, οὐς ἐφόβησας,
 οἳ δὲ τοι εἰς ἄστυ ἄλιν, σὺ δὲ δεῦρο λιάσθης.

Parse ἐφόβησας, ἄλιν, λιάσθης.

- (3) φράζεο νῦν, μή τοί τι θεῶν μήνιμα γένωμαι
 ἥματι τῷ, ὅτε κέν σε Πάρις καὶ Φοῖβος Ἀπόλλων
 ἐσθλὸν ἐόντ' ὀλέσωσιν ἐνὶ Σκαιῇσι πύλῃσι.

Who was Paris? What deed of his is here spoken of?

Give the Attic forms of πύλῃσι, φράζεο, ἐόντα.

THURSDAY, June 11, 1885. 9—11½.

For Candidates under the New Regulations.

HOMER, ILIAD, XXI. XXII.

(A)

I.

TRANSLATE:

- (1) ἀλλ' ἐπάμυνε τάχιστα, καὶ ἐμπύπληθι ῥέεθρα
ὑδατος ἐκ πηγέων, πάντας δ' ὀρόθυνον ἐναύλους,
ἴστη δὲ μέγα κῦμα, πολὺν δ' ὀρυμαγδὸν ὄρινε
φιτρῶν καὶ λάων, ἵνα παύσομεν ἄγριον ἄνδρα,
ὃς δὴ νῦν κρατέει, μέμονεν δ' ὄγε ἴσα θεοῖσιν.
φημὶ γὰρ οὔτε βίην χραισμησέμεν οὔτε τι εἶδος,
οὔτε τὰ τεύχεα καλὰ, τὰ που μάλα νειόθι λίμνης
κείσεθ' ὑπ' ἱλύος κεκαλυμμένα· καὶ δέ μιν αὐτὸν
εἰλύσω ψαμάθοισιν ἄλις χέραδος περιχεύας
μυρίον, οὐδέ οἱ ὅστέ' ἐπιστήσονται Ἀχαιοὶ
ἀλλέξαι· τόσσην οἱ ἄσιν καθύπερθε καλύψω.
αὐτοῦ οἱ καὶ σῆμα τετεύχεται, οὐδέ τί μιν χρεὼ
ἔσται τυμβοχόης, ὅτε μιν θάπτωσιν Ἀχαιοί.

Parse παύσομεν, μέμονεν, χραισμησέμεν.

Explain the use of τά—τά in the seventh line of this piece.

- (2) νῦν δὴ νῶϊ γ' ἔολπα, δίφιλε φαίδιμ' Ἀχιλλεῦ,
οἴσεσθαι μέγα κῦδος Ἀχαιοῖσι προτὶ νῆας,
Ἴκτορα δηώσαντε, μάχης ἅτόν περ ἑόντα.
οὔ οἱ νῦν ἔτι γ' ἔστι πεφυγμένον ἄμμε γενέσθαι,
οὐδ' εἴ κεν μάλα πολλὰ πάθοι ἐκάεργος Ἀπόλλων
προπροκυλινδόμενος πατρὸς Διὸς αἰγιόχοιο.
ἀλλὰ σὺ μὲν νῦν στῆθι καὶ ἄμπνυε, τόνδε δ' ἐγώ τοι
οἰχομένη πεπιθήσω ἐναντίβιον μάχεσασθαι.

Parse δηώσαντε, πεφυγμένον. Explain the construction of μάχης, ἄμμε.

- (3) νῦν δ' ἂν πολλὰ πάθῃσι, φίλου ἀπὸ πατρὸς ἁμαρτῶν,
 Ἄστυνάναξ, ὃν Τρῶες ἐπὶ κλησὶν καλέουσιν·
 οἷος γάρ σφιν ἔρυσσὸ πύλας καὶ τείχεα μακρά.
 νῦν δὲ σὲ μὲν παρὰ νηυσὶ κορωνίσιν, νόσφι τοκῆων,
 αἰόλαι εὐλαὶ ἔδονται, ἐπεὶ κε κύνες κορέσσονται,
 γυμνόν· ἀτάρ τοι εἴματ' ἐνὶ μεγάροισι κέονται
 λεπτά τε καὶ χαρίεντα, τετυγμένα χερσὶ γυναικῶν.

Explain the construction of πατρός, ἐπὶ κλησιν.

- (4) ἐνταυθοὶ νῦν κείσο μετ' ἰχθύσιν, οἳ σ' ὠτειλὴν
 αἶμ' ἀπολιχμήσονται ἀκηδέες.

Explain the construction of the accusatives.

- (5) τοῦ δὴ νῦν λαοῖσι φέρεις χάριν, οὐδὲ μεθ' ἡμῶν
 πειρᾷ ὥς κε Τρῶες ὑπερφίαλοι ἀπόλωνται.

Explain the construction of τοῦ, ἀπόλωνται.

- (6) αὐτὰρ ἐπεὶ κ' ἐς τεῖχος ἀναπνεύσωσιν ἀλέντες,
 αὖτις ἐπανθέμεναι σανίδας πυκινῶς ἀραρυίας.

Parse ἀλέντες, ἀραρυίας. Explain the construction of ἐπανθέμεναι.

- (7) δεῦτε, δῶ μοι ἔπεσθον, ἴδωμ' ὅτιν' ἔργα τέτυκται.
 αἰδοίης ἐκυρῆς ὁπὸς ἔκλυον.

Parse ὅτινα. Explain the construction of ὁπός.

II.

- (1) What simile is used of the spear of Achilles when Priam sees him from the walls of Troy and begs Hector to retreat within the city?
- (2) What part of the Trojan war is narrated in the Iliad?
- (3) What were the chief pieces of defensive armour worn by the Greeks?
- (4) Where were Θῆβαι, Παιονίη, Σιμοεῖς?
- (5) What was the general character of the Homeric Heroes?
- (6) Of whom or what are διάκτορος, γλαυκῶπις, θυσσανόεσσα, κελαδείνη used as epithets? Explain their meaning.

THURSDAY, June 11, 1885. 9—11½.

For Candidates under the New Regulations.

HOMER, ILIAD, XXI. XXII.

(B)

I.

TRANSLATE :

- (1) ὄρσεο, κυλλοπόδιον, ἐμὸν τέκος· ἄντα σέθεν γὰρ
 Ξάνθον δινήεντα μάχῃ ἡϊσκομεν εἶναι·
 ἀλλ' ἐπάμυνε τάχιστα, πιφαύσκειο δὲ φλόγα πολλήν.
 αὐτὰρ ἐγὼ Ζεφύροιο καὶ ἀργεστᾶο Νότοιο
 εἴσομαι ἐξ ἀλόθεν χαλεπὴν ὄρσουσα θύελλαν,
 ἥ κεν ἀπὸ Τρώων κεφαλὰς καὶ τεύχεα κῆαι,
 φλέγμα κακὸν φορέουσα. σὺ δὲ Ξάνθοιο παρ' ὄχθας
 δένδρεα καὶ, ἐν δ' αὐτὸν ἵει πυρί· μῆδ' σε πάμπαν
 μελιχίοις ἐπέεσσιν ἀποτρεπέτω καὶ ἀρειῇ.
 μῆδ' πρὶν ἀπόπαυε τεὸν μένος, ἀλλ' ὅπότ' ἂν δῇ
 φθιέγξομ' ἐγὼν ἰάχουσα, τότε σχεῖν ἀκάματον πῦρ.

Parse ὄρσεο, κῆαι, ἵει. Explain the construction of κῆαι, σχεῖν.

- (2) οὗ σ' ἔτι, Πηλέος υἱέ, φοβήσομαι, ὥς τὸ πάρος περ
 τρίς περὶ ἄστν μέγα Πριάμου δῖον, οὐδέ ποτ' ἔτλην
 μέιναι ἐπερχόμενον· νῦν αὐτέ με θυμὸς ἀνῆκεν
 στήμεναι ἀντία σείο· ἔλοιμί κεν, ἥ κεν ἀλοίην.
 ἀλλ' ἄγε δεῦρο θεοὺς ἐπιδώμεθα· τοὶ γὰρ ἄριστοι
 μάρτυροι ἔσσονται καὶ ἐπίσκοποι ἀρμονιάων·
 οὐ γὰρ ἐγὼ σ' ἔκπαγλον ἀεικίω, αἶ κεν ἐμοὶ Ζεὺς
 δῶη καμμονίην, σὴν δὲ ψυχὴν ἀφέλωμαι·
 ἀλλ' ἐπεὶ ἄρ' ἐκεῖ σε συλήσω κλυτὰ τεύχε', Ἀχιλλεῦ,
 νεκρὸν Ἀχαιοῖσιν δώσω· πάλιν ὥς δὲ σὺ ῥέζεις.

Parse ἐπιδώμεθα, στήμεναι. Explain the use of τοί.

- (3) τέκνον, ἐγὼ δειλὴ τί νυ βείομαι, αἰνὰ παθοῦσα
σεῦ ἀποτεθνηῶτος; ὃ μοι νύκτας τε καὶ ἡμαρ
εὐχολὴ κατὰ ἄστυ πελέσκειο, πᾶσί τ' ὄνειαρ,
Τρωσί τε καὶ Τρωῇσι κατὰ πτόλιν, οἳ σε θεὸν ὥς
δειδέχατ'· ἦ γάρ κέ σφι μάλα μέγα κῦδος ἔησθα
ζῶος ἐών· νῦν αὖ θάνατος καὶ μοῖρα κιχάνει.

Parse ἀποτεθνηῶτος. Explain the construction of σεῦ, νύκτας.

- (4) τόφρα τί μοι πεφιδέσθαι ἐνὶ φρεσὶ φίλτερον ἦεν
Τρώων, καὶ πολλοὺς ζῶους ἔλον ἢ δ' ἐπέρασσα.

Parse πεφιδέσθαι, φίλτερον.

- (5) εἰ δ' ἐθέλεις, πολέμοιο δαήμεναι, ὄφρα ἐδ' εἰδῆς
ὅσσον φερτέρη εἴμ', ὅτι μοι μένος ἀντιφερίζεις.

Parse δαήμεναι and explain the construction.

- (6) ἀλλὰ τε καὶ περὶ δουρὶ πεπαρμένη οὐκ ἀπολήγει
ἀλκῆς, πρὶν γ' ἢ ξυμβλήμεναι ἢ δαμῆναι.

Parse πεπαρμένη, δαμῆναι. Explain the construction of ξυμβλήμεναι.

- (7) Ἔκτορ, μή μοι μίμνε, φίλον τέκος, ἀνέρα τοῦτον
οἶος ἄνευθ' ἄλλων, ἵνα μὴ τάχα πότμον ἐπίσπης.

What is the construction of μοι? Distinguish οἶος and οἷος.

II.

- (1) What simile is used of Achilles when he is overtaken by the river?
- (2) Give the story of Laomedon.
- (3) What were the weapons of the Greek warrior?
- (4) Where were Ἀχελώϊος, Ἴμβρος, Πήδαςος?
- (5) What was the general character of the Homeric gods?
- (6) Of whom are αἰγιάχος, ἐκάεργος, ἀργειφόντης, ἀτρυτώνη used as epithets? Explain their meaning.

THURSDAY, June 11, 1885. 1—3½.

LATIN GRAMMAR.

(A)

For Candidates under the old Regulations.

1. GIVE the dative and accusative singular, and the genitive plural, of:—*acies*, *aries*, *iter*, *pondus*, *testudo*, *casus*.

2. (a) Decline in full in the singular:—*alacer*, *unusquisque*.

(b) Give the comparative and superlative degrees of:—*celer*, *diu*, *similis*; and the positive of:—*diligentissime*, *secius*.

3. (a) Give the 3rd person plural of the future indicative active, and the 2nd person plural of the imperfect subjunctive passive, of:—*do*, *intelligo*, *iubeo*.

(b) Give the 3rd person singular of the present subjunctive, active, of:—*ire*, *prodesse*.

(c) Give the perfect infinitive active, and the 1st person singular of the perfect indicative passive, of:—*caedo*, *cogo*, *proveho*, *sterno*.

4. What cases are governed by the prepositions, *clam*, *prope*, *sub*, and by the verbs, *noceo*, *utor*? Give one example illustrating the use of each, adding a translation in each instance.

5. (a) *equites venerunt qui nuntiarent*.

(b) *frater qui iam proelio excesserat*.

Explain why *qui* in (a) is followed by the subjunctive, *nuntiarent*, and in (b) by the indicative, *excesserat*.

6. (a) *ipse cum tenuissima valetudine esset*.

(b) *tertium iam hunc annum regnantem inimici eum interficiunt*.

(c) *sua esse eiusmodi imperia ut non minus haberet iuris in se multitudo quam ipse in multitudinem*.

Explain the constructions of the words in italics.

THURSDAY, June 11, 1885. 1—3½.

GREEK GRAMMAR.

(A)

For Candidates under the old Regulations.

I. GIVE the genitive singular of *δαίμων*, the accusative singular of *γύψ*, and the dative plural of *θυγάτηρ*. What are the Attic corresponding to the Homeric forms,—*χείρεσσι*, *Ἀτρεΐδαο* and *γέλω*?

II. Give the accusative singular of *μέλας*, the dative singular of *θυσσανόεις*, the genitive singular of *μεμαώς*, the accusative plural of *τραχύς*, and the accusative and dative plural of *μείζων*.

Compare *ταχέως*, *ῥάδιος*.

III. Write down:

- (a) 3 person singular 1 aorist indicative middle, of *κόπτω*.
- (b) 2 person singular present imperative middle, of *δηλόω*.
- (c) 3 person plural 2 aorist indicative passive, of *ἀπορρήγνυμι*.
- (d) 2 person singular present indicative middle, of *πειράω*.
- (e) 2 person singular 1 aorist imperative active, of *κατακτείνω*.
- (f) 3 person singular 2 aorist indicative active, of *φύω*.
- (g) 2 person plural indicative, of *οἶδα*.

IV. Translate the following passages:

- (1) *ὥς ὁ τὸν οὐ δύνατο μάρψαι ποσίν, οὐδ' ὅς ἀλύξαι.*

What would *ὁ*, *τόν*, and *ὅς*, be in Attic Greek?

- (2) *ἄλλον μὲν χλαίνης ἐρύων, ἄλλον δὲ χιτῶνος.*

Explain the construction of *ἄλλον* and *χλαίνης*.

- (3) *αὐτὰρ ὁ βῆ ῥ' ἰέναι μετὰ Παίονας ἵπποκορυστάς.*

What is the exact force of *μετά* here? What other cases does it govern beside the accusative, and with what meaning?

- (4) *εἰσορόων χροῶα καλόν, ὅπη εἴξειε μάλιστα.*

What mood is *εἴξειε*, and why?

V. Shew in what various ways and with what parts of the verb *πρίν* and *ἵνα* are used in Greek.

THURSDAY, June 11, 1885. 1—3½.

LATIN GRAMMAR.

(B)

For Candidates under the old Regulations.

1. Give the dative and accusative singular, and the genitive plural, of:—*compes*, *facies*, *ius*, *munus*, *portus*, *vir*.

2. (a) Decline in full in the singular:—*acer*, *uterque*.

(b) Give the comparative and superlative degrees of:—*arduus*, *difficilis*, *potis*; and the positive of:—*plus*, *brevissime*.

3. (a) Give the 2nd person plural of the future indicative active, and the 3rd person singular of the imperfect subjunctive passive, of:—*eo*, *prodo*, *vincio*.

(b) Give the 3rd person singular of the perfect subjunctive, active, of:—*tollo*, *vinco*.

(c) Give the perfect infinitive active, and the 1st person singular of the perfect indicative passive, of:—*laedo*, *defigo*, *effero*, *instruo*.

4. What cases are governed by the prepositions, *citra*, *pro*, *supra*, and by the verbs, *fungor*, *ignosco*? Give one example illustrating the use of each, adding a translation in each instance.

5. (a) *cum magna multitudine hostium premeretur aquilam proiecit*.

(b) *cum se inter equitum turmas insinuaverunt*.

Explain why *cum* is followed in (a) by the subjunctive, *premeretur*, and in (b) by the indicative, *insinuaverunt*.

6. (a) *hoc cum magna voce dixisset*.

(b) *secutae sunt continuos complures dies tempestates*.

(c) *quid vectigalis populo Romano in annos singulos Britannia penderet constituit*.

Explain the constructions of the words in italics.

THURSDAY, June 11, 1885. 1—3½.

GREEK GRAMMAR.

(B)

For Candidates under the old Regulations.

I. GIVE the genitive singular of *ἡμαρ*, the accusative plural of *ψηφίς*, and the dative singular of *φλόξ*. What are the Attic forms corresponding to the Homeric forms *πόδεσσι*, *ἀργεστᾶο* and *ιδρῶ*?

II. Give the accusative singular of *μέγας*, the dative singular of *ὀμφαλόεις*, the genitive singular of *εἰκώς*, the accusative plural of *ὄξυς*, and the accusative and dative plural of *κρείσσων*.

Compare *μάλα*, *ὀλίγος*.

III. Write down:

- (a) 2 person singular 1 aorist imperative middle, of *λύω*.
- (b) 3 person singular present subjunctive middle, of *δηλόω*.
- (c) 3 person singular 2 aorist indicative active, of *ὑποτρέχω*.
- (d) 2 person singular 1 aorist subjunctive active, of *ὀρέγνυμι*.
- (e) 3 person plural imperfect indicative active, of *κυβιστάω*.
- (f) 1 person plural optative, of *οἶδα*.
- (g) 2 person singular 2 aorist indicative active, of *ἀφαιρέω*.

IV. Translate the following passages:

- (1) οὗτ' ἄρ' ὁ τὸν δύναται ὑποφεύγειν, οὗθ' ὁ διώκειν.

What would *ὁ*, *τόν*, and *ὁ* be in Attic Greek?

- (2) μή με, κύον, γούνων γουνάζεο, μηδὲ τοκήων.

Explain the construction of *με* and *γούνων*.

- (3) αὐτὸς δὲ ποτὶ πτόλιος πέτετ' αἰεὶ.

What is the force of the preposition *ποτί* here? What other cases does it govern, and with what meaning?

- (4) οὐδ' ἄρα τολγ' ἔτλαν...
μείναι ἔτ' ἀλλήλους, καὶ γινώμεναι ὅς τε πεφεύγοι.

What mood is *πεφεύγοι*, and why?

V. Shew in what various ways, and with what parts of the verb *ζῶς* and *ὑπῶς* are used in Greek.

THURSDAY, June 11, 1885. 1—3½.

LATIN GRAMMAR.

(A)

For Candidates under the new Regulations.

1. DECLINE in the singular *Cingetorix*, *praeco*, *meridies*; in the plural *cespes*, *testudo*.
2. Decline in the singular *equester*, *par*. Compare *creber*, *celeriter*. Give (in words) the Latin for 'on the sixteenth day,' 'six hundred miles.'
3. Give the meaning and genitive singular of *quivis*, *alter*. In what kind of sentences is *quis* ('any') used?
4. What cases do *erga*, *prope*, *citra* govern? What cases follow *medeor*, *noceo*?
5. Write out in full the perfect subjunctive active of *possideo*; the pluperfect indicative active of *praesto*; nominative singular of all participles of *transeo*.
6. Give the principal parts of *comperio*, *exardesco*, *contemno*, *demeto*. What parts of the verb are *oreretur*, *terrear*?
7. Explain the use of *case* or *mood* of the italicized words in the following sentences:
 - (a) *magno* sibi *usui* fore arbitrabatur.
 - (b) *summi* ut sint *laboris* efficiunt.
 - (c) *capite* solo ex aqua exstabant.
 - (d) Titurius, qui nihil ante *providisset*, *trepidare* et *concursare*.
8. How is a command expressed in *Oratio Obliqua*? Convert into *Oratio Obliqua*—"Desilite, milites, nisi vultis aquilam hostibus prodere; ego certe meum reipublicae atque imperatori officium praestitero."

GREEK GRAMMAR.

When H is placed after a word the Homeric form is to be given.

1. GIVE the gen. sing. of *θέα*, *ἡμαρ*, *Ἄϊδης H*; dat. sing. of *κῆδος*; acc. sing. of *κόρυς*, *χρώς*; dat. plur. of *κεῦθος*; gen. sing. of *ναῦς H*.

2. Give the acc. sing. of *μέγας*; nom. plur. masc. of *ἄρειος H*; acc. plur. neut. of *πτερόεις*; acc. plur. of *μῶνυξ*; the comparative and superlative of *ἀγαθός* and *αἰδοῖος*; the gen. sing. of *ἐγώ H*; gen. sing. masc. of *ῥστις H*.

3. Write down and give the English of the
 imperf. ind. act. 3rd pers. sing. of *προσφωνέω*;
 1st aor. ind. act. 3rd pers. sing. of *μεθίημι*;
 perf. pass. partic. nom. sing. fem. of *πείρω*;
 2nd aor. ind. act. 3rd pers. sing. of *ὑποτρέχω*;
 1st aor. ind. pass. 2nd pers. sing. of *λιάζομαι*;
 1st aor. mid. opt. 2nd pers. sing. of *κομίζω*;
 2nd aor. subj. mid. 1st pers. sing. of *ἀφαιρέω*;
 1st aor. imper. act. 2nd pers. sing. of *ῖστημι*;
 pluperf. ind. pass. 3rd pers. sing. of *χολόω*.

4. Do not translate the following sentences, but explain the construction of the words indicated:

- | | |
|---|-----------------------|
| (a) <i>ὁ δ' ἐπεὶ κάμε χεῖρας ἐναίρων.</i> | <i>χεῖρας.</i> |
| (b) <i>αἷματος ἄσαι Ἄρηα.</i> | <i>αἷματος, Ἄρηα.</i> |
| (c) <i>ἄλλον μὲν χλαίνης ἐρύων, ἄλλον δὲ χιτῶνος.</i> | <i>χλαίνης.</i> |
| (d) <i>ἦν μὴ καὶ σὺ θάνης Ἀχιλῆι δαμασθεῖς.</i> | <i>Ἀχιλῆι.</i> |
| (e) <i>ἀλλὰ καὶ ὥς ὀλέεσθε κακὸν μόρον.</i> | <i>μόρον.</i> |

5. Explain the construction of the following sentences:

- | | |
|---|-----------------|
| (a) <i>ἀφικόμην ἵνα εὕροιμι αὐτόν.</i> | <i>εὕροιμι.</i> |
| (b) <i>οἶδα θνητὸς ὦν.</i> | |
| (c) <i>μὴ χάριν ἔχει τῷ δούλῳ ἐκείνῳ;</i> | |
| (d) <i>διὰ τὸ ξένον εἶναι τὸν ἄνδρα.</i> | |

6. What cases do *παρά*, *ἀπό*, *διά* govern? and what is the meaning of the preposition in each instance?

THURSDAY, June 11, 1885. 1—3½.

LATIN GRAMMAR.

(B)

For Candidates under the new Regulations.

1. DECLINE in the singular *Dumnoria*, *gener*, *obses*; in the plural *sudes*, *cohors*.
2. Decline in the singular *praeceps*, *vetus*. Compare *acer*, *audacter*. Give (in words) the Latin for 'on the eighteenth day,' 'fifty thousand men.'
3. Give the meaning and genitive singular of *quispiam*, *uterque*. In what kind of sentences is *quisquam* used?
4. What cases do *cis*, *secundum*, *praeter* govern? What cases follow *ignosco*, *diffido*?
5. Write out in full the future-perfect indicative active of *praesto*; the present subjunctive active of *adeo*; nominatives singular of all participles of *ulciscor*.
6. Give the principal parts of *cognosco*, *rescindo*, *inveterasco*, *permulceo*. What parts of the verb are *affore*, *sapient*?
7. Explain the use of *case* or *mood* of the italicized words in the following sentences:
 - (a) *Loca sunt temperatiora quam in Gallia remissioribus frigoribus.*
 - (b) *magni interesse arbitrabatur.*
 - (c) *Hibernia dimidio minor est quam Britannia.*
 - (d) *Volusenus perspectis regionibus, quantum ei facultatis dari potuit, qui navi egredi non auderet, ad Caesarem revertitur.*
8. How is a question expressed in *Oratio Obliqua*? Convert into *Oratio Obliqua*—"Quid dubitas, Vorene? aut quem locum tuae probandae virtutis exspectas? Hic dies de nostris controversiis judicabit."

GREEK GRAMMAR.

When H is placed after a word the Homeric form is to be given.

1. GIVE the gen. sing. of γένος, αὐχὴν, θάνατος H; dat. sing. of χιῶν; accus. sing. of ἰμάς, γαῖα; gen. plur. of πύλη H; dat. plur. of χεῖρ.

2. Give the accus. sing. masc. of εὐρύς; acc. plur. masc. of πολὺς H; gen. sing. of διπετής; gen. sing. fem. of ἐρίβωλος; the comparative and superlative of νέος and κακός; gen. sing. of σύ H; acc. sing. neut. of ὅστις H.

3. Write down and give the English of the
 1st aor. ind. act. 3rd pers. sing. of ἀπειλέω;
 1st aor. ind. act. 3rd pers. sing. of ἀφίημι;
 perf. pass. partic. nom. sing. masc. of περάω;
 2nd aor. ind. mid. 3rd pers. sing. of ἀνέχω;
 2nd aor. subj. mid. 1st pers. plur. of ἐπιδίδωμι;
 2nd aor. pass. opt. 2nd pers. sing. of δαμάω;
 1st aor. partic. pass. dat. sing. masc. of ἐρείδω;
 2nd aor. imper. act. 2nd pers. sing. of ἵστημι;
 perf. ind. pass. 3rd pers. sing. of τεύχω.

4. Do not translate the following sentences, but explain the construction of the words indicated:

- | | |
|---|-------------|
| (a) νῦν δ' ἐμὲ μὲν μέγα κῦδος ἀφείλεο. | ἐμέ, κῦδος. |
| (b) ἦ τ' ἂν ἔπειτα χαλκοῦ τε χρυσοῦ τ' ἀπολυσόμεθα. | χαλκοῦ. |
| (c) περὶ δ' αἴσυλα ῥέξεις ἀνδρῶν. | ἀνδρῶν. |
| (d) μεμαῶς Ἀχιλῆϊ μάχεσθαι. | Ἀχιλῆϊ. |
| (e) μένεος δ' ἐμπλήσατο θυμόν. | μένεος. |

5. Explain the construction of the following sentences:

- | | |
|---|---------|
| (a) ἀπῆλθον ἵνα μὴ ἴδοιμι αὐτόν. | ἴδοιμι. |
| (b) οἶδά σε θνητὸν ὄντα. | |
| (c) οὐ μὴ με ἴδητε. | |
| (d) τὸ ἀποθνήσκειν ἀνὴρ ἀγαθὸς οὐ φοβείται. | |

6. What cases do μετά, κατά, πρό govern? and what is the meaning of the preposition in each instance?

FRIDAY, June 12, 1885. 9—11½.

UNPREPARED TRANSLATIONS.

(A)

TRANSLATE into ENGLISH:

(1) Erat Athenis spatiosa et capax domus, sed infamis et pestilens. Per silentium noctis sonus ferri, et, si attenderes acrius, strepitus vinculorum longius primo, deinde e proximo reddebatur: mox apparebat idolon, senex macie et squalore confectus, promissa barba, horrenti capillo: cruribus compedes, manibus catenas gerebat quatiebatque.....Et haec quidem adfirmantibus credo. Illud adfirmare aliis possum. Est libertus mihi, non illiteratus. Cum hoc minor frater eodem lecto quiescebat. Is visus est sibi cernere quendam in toro residentem, admoventemque capiti suo cultros, atque etiam ex ipso vertice amputantem capillos. Ubi illuxit, ipse circa verticem tonsus, capilli iacentes reperiuntur. Exiguum temporis medium, et rursus simile aliud priori fidem fecit. Puer in paedagogio mistus pluribus dormiebat: venerunt per fenestras (ita narrat) in tunicis albis duo, cubantemque detonderunt; et qua venerant, recesserunt. Hunc quoque tonsum, sparsosque circa capillos dies ostendit.

PLINY, *Ep.* VII. 27.

(2) Mollis erat tellus rorata mane pruina:
 Ante sui populus limina regis adest.
 Prodit, et in solio medius consedit acerno.
 Innumeri circa stantque silentque viri.
 Ortus erat summo tantummodo margine Phoebus:
 Sollicitae mentes speque metuque pavent.
 Constitit, atque caput niveo velatus amictu
 Iam bene dis notas sustulit ille manus,
 Atque ita 'Tempus adest promissi muneris' inquit.
 'Pollicitam dictis, Iuppiter, adde fidem.'
 Dum loquitur, totum iam sol emoverat orbem,
 Et gravis aethereo venit ab axe fragor.
 Ter tonuit sine nube deus, tria fulgura misit.
 Credite dicenti: mira, sed acta, loquor.
 Ecce levi scutum versatum leniter aura
 Decidit. a populo clamor ad astra venit.

OVID, *Fasti*, III. 357—374.

FRIDAY, June 12, 1885. 9—11½.

UNPREPARED TRANSLATIONS.

(B)

TRANSLATE into ENGLISH :

(1) Omnis hic aetas piscandi, navigandi, atque etiam natandi studio tenetur : maxime pueri, quos otium ludusque sollicitant. His gloria et virtus altissime provehi : victor ille, qui longissime, ut litus, ita simul natantes, reliquit. Hoc certamine puer quidam, audentior ceteris, in ulteriora tendebat. Delphinus occurrit, et nunc praecedere puerum, nunc sequi, nunc circumire, postremo subire, deponere, iterum subire, trepidantemque perferre primum in altum : mox flectit ad litus, redditque terrae et aequalibus. Serpit per coloniam fama : concurrere omnes, ipsum puerum tanquam miraculum adspicere, interrogare, audire, narrare. Postero die obsident litus, prospectant mare, et si quid est mari simile. Natant pueri : inter hos ille, sed cautius. Delphinus rursus ad tempus, rursus ad puerum venit.....Hoc altero die, hoc tertio, hoc pluribus, donec homines innutritos mari subiret timendi pudor. Accedunt, et adludunt, et appellant : tangunt etiam, pertrectantque praebentem. Crescit audacia experimento. Maxime puer, qui primus expertus est, adnatantis insilit tergo : fertur referturque, agnosci se, amari putat, amat ipse : neuter timet, neuter timetur : huius fiducia, mansuetudo illius augetur. Nec non alii pueri dextra laevaue simul eunt hortantes monentesque.

PLINY, *Ep.* ix. 33.

(2) Iam steterant acies ferro mortique paratae,
 Iam lituus pugnae signa daturus erat :
 Cum raptae veniunt inter patresque virosque,
 Inque sinu natos, pignora cara, tenent.
 Ut medium campi scissis tetigere capillis,
 In terram posito procubuere genu :
 Et quasi sentirent, blando clamore nepotes
 Tendebant ad avos bracchia parva suos.
 Qui poterat, clamabat avum, tunc denique visum,
 Et qui vix poterat, posse coactus erat.
 Tela viris animique cadunt. gladiisque remotis
 Dant soceri generis accipiuntque manus,
 Laudatasque tenent natas, scutoque nepotem
 Fert avus. hic scuti dulcior usus erat.

OVID, *Fasti*, III. 215—228.

SATURDAY, June 13, 1885. 9—11½.

ADDITIONAL ALGEBRA.

(A)

1. FIND the sum of n terms of a G.P. of which the first term is a and last term ar^{n-1} .

2. Sum the following series:—

$$18\frac{1}{2} + 17\frac{1}{2} + 16\frac{1}{2} + \dots \text{to } 19 \text{ terms,}$$

$$(x-1)^2 + (x^2+1) + (x+1)^2 + \dots \text{to } x \text{ terms,}$$

$$\frac{2}{3} - 1 + \frac{2}{3} - \dots \text{to } 5 \text{ terms,}$$

$$5 + 4 + 1\frac{2}{3} + \dots \text{to infinity.}$$

3. If M and N are the sums of m and n terms respectively of an A.P., whose first term is a , prove that

$$\frac{n-1}{m} M - \frac{m-1}{n} N = (n-m)a.$$

Apply this formula to find the first term of an A.P., the sum of 20 terms of which is 480, and of 30 terms is 1020.

4. Find an A.P. whose first term is 3 and whose 1st, 3rd, and 7th terms form a G.P.

5. A man, who has a piece of work to do, works with the help of his son on the 1st day. On the 2nd day he leaves his son to continue the work with a younger boy (who can do only $\frac{1}{2}$ of the work the man can), and half as much work is done as on the 1st day. He then finishes the work in 2 days more with the help of the younger boy only.

In how long could it have been done by the man and two boys together?

6. £1300 is divided among 4 brothers so that the sum received by each bears a constant ratio to that received by the one next in age. The amount received by the eldest is $\frac{2}{5}$ of the sum of the amounts received by the 2nd and 3rd. How much did each receive?

7. The number of pence per yard paid by a merchant for silk is $\frac{1}{12}$ of the number of yards he buys. One-sixth of the quantity being damaged, he sells it at 1s. 3d. per yard; the rest he sells at 5s. 3d. per yard, and gains altogether £2. 14s. How much would he have gained if he could have sold all at the higher price?

8. Prove that

$$\frac{1}{r} \log_a m = \log_a \sqrt[r]{m},$$

and

$$\log_a N = \frac{1}{\log_b a} \log_b N.$$

Explain the use made of this latter formula in calculating logarithms to the base 10.

9. Find the logarithms of $\sqrt{27}$ and $\cdot 037$ to base $\sqrt[3]{3}$.

10. Having given

$$\log_{10} 3 = \cdot 4771213,$$

$$\log_{10} 5 = \cdot 6989700,$$

$$\log_{10} 7 = \cdot 8450980,$$

find $\log_{10} \sqrt{28}$, $\log_{10} 3\cdot 888$, and $\log_{10} \cdot 1742$.

SATURDAY, June 13, 1885. 9—11½.

ADDITIONAL ALGEBRA.

(B)

1. FIND the sum of n terms of an A.P. of which the first term is a and last term l .

2. Sum the following series:—

$$17\frac{1}{2} + 16\frac{2}{3} + 15\frac{1}{3} + \dots \text{to 18 terms,}$$

$$(x+1)^2 + (x^2+1) + (x-1)^2 + \dots \text{to } x+2 \text{ terms,}$$

$$\frac{3}{4} - 1 + \frac{1}{4} - \dots \text{to 5 terms,}$$

$$4 + 3 + \frac{2}{3} + \dots \text{to infinity.}$$

3. If M and N are the sums of m and n terms respectively of an A.P., of which the common difference is b , prove that

$$\frac{N}{n} - \frac{M}{m} = (n-m) \frac{b}{2}.$$

Apply this formula to find the common difference of an A.P., the sum of 20 terms of which is 480, and of 30 terms is 1020.

4. Find an A.P. whose first term is 2 and whose 1st, 4th and 10th terms form a G.P.

5. A man, who has a piece of work to do, works with the help of his son on the 1st day. On the 2nd day he leaves his son to continue the work with a younger boy (who can do only $\frac{1}{3}$ of the work the man can), and $\frac{2}{3}$ as much work is done as on the 1st day. He then finishes the work in $1\frac{1}{2}$ days more with the help of the younger boy only.

In how long could it have been done by the man and two boys together?

6. £1400 is divided among 4 brothers so that the sum received by each bears a constant ratio to that received by the one next in age. The amount received by the eldest is $\frac{1}{3}$ of the sum of the amounts received by the 2nd and 3rd. How much did each receive?

7. The number of pence per yard paid by a merchant for silk is $\frac{1}{12}$ of the number of yards he buys. One-fourth of the quantity being damaged, he sells it at 1s. 4d. per yard; the rest he sells at 5s. 4d. per yard, and gains altogether £2. 11s. How much would he have gained if he could have sold all at the higher price?

8. Prove that

$$\frac{1}{p} \log_a m^p = \log_a m,$$

and

$$\log_a N = \log_a a \cdot \log_a N.$$

Explain the use made of this latter formula in calculating logarithms to the base 10.

9. Find the logarithms of $\sqrt{32}$ and $\cdot 03125$ to base $\sqrt[3]{2}$.

10. Having given

$$\log_{10} 2 = \cdot 3010300,$$

$$\log_{10} 3 = \cdot 4771213,$$

$$\log_{10} 7 = \cdot 8450980,$$

find $\log_{10} 5.832$, $\log_{10} \sqrt[3]{35}$, and $\log_{10} \cdot 3048$.

SATURDAY, June 13, 1885. 1—3½.

TRIGONOMETRY.

(A)

1. WHAT meaning is always given to the symbol
- π
- ?

Find the number of radians in the angles of a triangle which are in A.P. the least containing 20° . (The unit of circular measure is called a radian.)

2. Define the sine of an angle.

Shew from your definition that if A be an angle between $(2n+1)180^\circ$ and $2n \times 180^\circ$, where n is a whole number, $\sin A$ is negative.

3. Prove that
- $\sin(90^\circ + A) = \cos A$
- and that
- $\cos(90^\circ + A) = -\sin A$
- .

Deduce the formula $\sin(45^\circ + A) = \cos(45^\circ - A)$.

4. Find the values of
- $\sin 60^\circ$
- ,
- $\tan 30^\circ$
- .

Find all the angles less than two right angles which satisfy the equation

$$3 \tan^2 \theta + 8 \cos^2 \theta = 7.$$

5. Draw and explain a figure shewing all the angles which have the same tangent as
- 30°
- .

Draw and explain a figure giving all the values of θ which satisfy the equation $\tan 2\theta = \tan 60^\circ$.

6. Prove geometrically or otherwise that

$$\tan(A+B) = \frac{\tan A + \tan B}{1 - \tan A \tan B},$$

$A+B$ being $< 90^\circ$,

and deduce from it that

$$\tan 3A = \frac{3 \tan A - \tan^3 A}{1 - 3 \tan^2 A}.$$

Prove that

$$(i) \quad 1 + \sec 2\beta = 2 \cos^2 \beta \sec 2\beta.$$

$$(ii) \quad \cos 25^\circ - \sin 5^\circ = \cos 35^\circ.$$

7. Prove that in any triangle

$$4bc \cos^2 \frac{A}{2} = (a+b+c)(b+c-a).$$

8. Prove that the sines of the angles of a triangle are proportional to the lengths of the opposite sides.

Prove that

$$\tan \frac{A}{2} = \frac{b-c}{b+c} \cot \frac{B-C}{2}.$$

9. In a triangle the sides
- a
- ,
- b
- ,
- c
- are proportional to 3, 8, 9, find the angles having given that

$$\log 2 = .301030, \quad \log 7 = .8450980.$$

$$L \tan 9^\circ 35' = 9.227471; \quad \text{diff. for } 1' = .000769.$$

$$L \tan 30^\circ 36' = 9.771880; \quad \text{diff. for } 1' = .000288.$$

SATURDAY, June 13, 1885. 1—3½.

TRIGONOMETRY.

(B)

1. WHAT is the circular measure of one right angle?

Find the number of radians in the angles of a triangle which are in A.P. the greatest containing 145° . (The unit of circular measure is called a radian.)

2. Define the cosine of an angle.

Shew from your definition that if A be an angle between $(4n+1)90^\circ$ and $(4n+3)90^\circ$ when n is a whole number $\cos A$ is negative.

3. Prove that
- $\cos(90^\circ - A) = \sin A$
- and that
- $\sin(90^\circ - A) = \cos A$
- .

Deduce the formula $\sin(45^\circ + A) = \cos(45^\circ - A)$.

4. Find the values of
- $\sin 30^\circ$
- ,
- $\tan 60^\circ$
- .

Find all the angles less than two right angles which satisfy the equation

$$8 \cos^4 \theta + 10 \sin^2 \theta = 7.$$

5. Draw a figure shewing all the angles which have the same cotangent as
- 60°
- .

Draw a figure giving all the values of θ which satisfy the equation $\cot 2\theta = \cot 45^\circ$.

Give a description of each figure.

6. Prove geometrically or otherwise that

$$\cot(A+B) = \frac{\cot A \cot B - 1}{\cot A + \cot B},$$

$A+B$ being $< 90^\circ$,

and deduce from it that

$$\cot 3A = \frac{\cot^3 A - 3 \cot A}{3 \cot^2 A - 1}.$$

Prove that

- (i) $\operatorname{cosec} 2x - \cot 2x = \tan x$.
 (ii) $\cos 5^\circ - \sin 25^\circ = \sin 35^\circ$.

7. Prove that

$$4bc \sin^2 \frac{A}{2} = (a+b-c)(a+c-b).$$

8. Prove that in any triangle

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}.$$

Prove that

$$\frac{a+c}{a-c} = \cot \frac{B}{2} \cot \frac{A-C}{2}.$$

9. In a triangle
- ABC
- the sides are proportional to 4, 7, 9, find the angles having given that

$$\log 2 = .301030.$$

$$L \tan 12^\circ 36' = 9.349329 \text{ diff. for } 1' = .000593.$$

$$L \tan 24^\circ 5' = 9.650281 \text{ diff. for } 1' = .000339.$$

MONDAY, June 15, 1885. 9—11½.

MECHANICS.

(A)

1. WHAT do you understand by the *direction* of a force?

Deduce from the Parallelogram of Forces a theorem which enables us to obtain the relative magnitudes of three forces maintaining a particle in equilibrium, when their directions are given.

A weight of 10 lbs. is supported by two forces, one of which acts horizontally and the other at an angle of 30° with the horizon: find the magnitude of these forces.

2. Find the resultant of two parallel forces, acting in opposite directions.

A tricycle weighing 5 st. 4 lbs. has a small wheel symmetrically placed 3 ft. behind 2 large wheels which are 3 ft. apart: if the centre of gravity of the machine be 9 inches behind the front wheels, and that of the rider who weighs 9 stone be 3 in. behind, find the pressures on the ground of the different wheels.

3. Prove that the algebraical sum of the moments of two forces, whose lines of action intersect, about a point is equal to the moment of their resultant about that point.

Explain why a stick which will support a considerable longitudinal tension, can be broken by a very much smaller force applied at right angles to its length.

4. Define the *centre* of a number of parallel forces.

Has the Earth a centre of gravity, or any analogous point?

A uniform lamina in the shape of a right-angled triangle, such that one of the sides containing the right angle is three times the other, is suspended by a string attached to the right angle; prove that in the position of equilibrium the hypotenuse makes with the vertical an angle $\sin^{-1} \frac{3}{4}$.

5. Describe the Common Steelyard, and shew that its sensitiveness is independent of the magnitude of the moveable weight.

A steelyard is 12 inches long, and with the scale-pan weighs 1 lb., the centre of gravity of the two being 2 inches from the end to which the scale-pan is attached; find the position of the fulcrum when the moveable weight is 1 lb. and the greatest weight that can be ascertained by means of the steelyard is 12 lbs.

6. Find the conditions of equilibrium in that system of pulleys in which each string is fastened to the weight.

Shew that in the above system, if any of the pulleys be heavy, their weight assists the power.

7. Find the ratio of the power to the weight on a smooth inclined plane, when the former acts parallel to the plane.

What is the inclination to the horizon of the steepest plane on which a power of 5 lbs. will support a weight of 10 lbs.?

MONDAY, June 15, 1885. 9—11½.

MECHANICS.

(B)

1. WHAT do you understand by the statement that the magnitude of one force is three times that of another?

Deduce from the Parallelogram of Forces a theorem which enables us to obtain the angles between the directions of three forces, maintaining a particle in equilibrium, when their magnitudes are given.

A weight of 12 lbs. is supported by two forces, whose magnitudes are 12 lbs. and $12\sqrt{2}$ lbs. respectively; find the directions of these forces.

2. Find the resultant of two parallel forces, acting in the same direction.

A front-steering tricycle weighing 6 stones has a small wheel, symmetrically placed with respect to two equal large wheels, 3 feet 6 inches in front of the line joining their centres which are 3 feet apart: if the centre of gravity of the machine be distant horizontally 1 foot in front of the hind-wheels, and that of the rider weighing 11 stones be 6 inches in front, find how the pressure is distributed among the three wheels.

3. Prove that the algebraical sum of the moments of two like parallel forces about a point is equal to the moment of their resultant about that point.

Explain why it is so much easier to support a weight, with the arm hanging downwards, than to hold it out at arm's length.

4. Define the *centre of gravity* of a body, and state what assumptions are involved in your definition.

A uniform lamina in the shape of a rectangle whose length is double its breadth is suspended by a string attached to one corner; prove that in the position of equilibrium the diagonal not passing through the point of suspension makes with the vertical an angle $\sin^{-1}\frac{1}{4}$.

5. Define the *sensitiveness* of a balance, and shew that in the Danish steelyard the sensitiveness diminishes as the weight which is ascertained by means of it increases.

Find the length of a Danish steelyard, weighing 1 lb., when the distance between the graduations 4 lbs. and 5 lbs. is 1 inch.

6. Find the relation between the power and the weight in that system of pulleys in which each hangs in the loop of a separate string.

Shew that if in the above system any of the pulleys are heavy, their weight acts against the power.

7. Find the ratio of the power to the weight on a smooth inclined plane, when the former acts horizontally.

Find the magnitude of the least possible force, which can support a weight of 15 lbs. on a smooth plane inclined at an angle of 30° to the horizon.

ANSWERS.

GENERAL EXAMINATION.

ALGEBRA. (A.) (Page 591.)

1. $x = -1$. 2. (1) $x = 1$, or $-2\frac{1}{2}$; (2) $x = 5$; (3) $x = m$, or $\frac{m^2 - n^2}{2m}$;
 $y = n$, or $\frac{n^2 - m^2}{2n}$. 4. £2320 and £2350. 5. 10 cows and 12 horses.
6. 83. 8. 15. 11. (1) $79\frac{1}{18}$; (2) -240 ; (3) 54. 12. 13.

ALGEBRA. (B.) (Page 592.)

1. $x = 1$. 2. (1) $x = 1$, or $2\frac{8}{15}$; (2) $x = 6$; (3) $x = a$, or $\frac{a^2 - b^2}{2a}$; $y = b$,
or $\frac{b^2 - a^2}{2b}$. 4. £4680 and £4720. 5. 12 horses and 10 cows. 6. 73.
8. 15. 11. (1) $59\frac{1}{4}$; (2) -180 ; (3) $43\cdot2$. 12. 13.

PREVIOUS EXAMINATION.

ARITHMETIC. (A.) (Page 600.)

1. 990888097. 2. 8. 3. 135953·1; $1\frac{7}{85}$. 4. 51315; 17·952. 5. $\frac{1}{10}$.
6. £1834. 19s. 8 $\frac{1}{10}$ d. 7. 5 days. 8. 9s. 6d. 9. £60; £80. 10. £18. 15s.

ARITHMETIC. (B.) (Page 601.)

1. 8998888261. 2. 21. 3. 27190·62; $3\frac{1}{4}$. 4. 97179; 21·849. 5. $\frac{1}{10}$.
6. £1083. 2s. 7 $\frac{1}{4}$ d. 7. 7 days. 8. £14. 11s. 8d. 9. £60; £65. 10. £1200.

ALGEBRA. (A.) (Page 602.)

2. $x^3 + 2x$, $x^5 - ax^4 - a^4x + x^5$.
3. (i) $x(x-2)^2$; (ii) $(x-1)^2(x+1)$; (iii) $(x-1)(x+1)(y-1)(y+1)$. 4. $\frac{2a+2x}{a-x}$.
5. (i) 5; (ii) $-\frac{1}{2}(a+b)$; (iii) $x=1$, $y=-1$; (iv) $2\frac{1}{3}$, or $\frac{7}{3}$;
(v) $x = \pm \frac{1}{2}$, $y = \pm 5$, or $x = \pm 4$, $y = \mp 2$. 7. £20, £30.
10. $7\frac{1}{2}$, $72\frac{1}{2}$, 4950. 11. (i) 820; (ii) $5\frac{1}{3}$; (iii) 0.

ALGEBRA. (B.) (Page 603.)

2. $y^3 - 2y$, $y^5 - by^4 - b^4y + b^5$.
3. (i) $y(y+2)^2$; (ii) $(y-1)(y+2)^2$; (iii) $(a-1)(a+1)(b-1)(b+1)$. 4. $\frac{2b+2y}{b-y}$.
5. (i) 7; (ii) $\frac{1}{2}(d-c)$; (iii) $x=3$, $y=-1$; (iv) $-\frac{8}{3}$, $-\frac{5}{3}$;
(v) $x = \pm 3$, $y = \pm 5$, or $x = \pm 6\frac{1}{2}$, $y = \mp \frac{1}{2}$. 7. £38, and £32.
10. 30, 234, 8217. 11. (i) 495; (ii) $20\frac{1}{2}$; (iii) 0.

ADDITIONAL ALGEBRA. (A.) (Page 634.)

2. $202\frac{1}{2}$; $x(x-1)(2x-1)$; $2\frac{7}{14}$; 25. 3. 5. 4. 3, $4\frac{1}{2}$, 6,
5. $2\frac{1}{2}$ days. 6. £160, £240, £360, £540. 7. £24. 6s. 0d. 9. $\frac{3}{4}$, -9.
10. 7235790; 5897265; 1·2411034.

ADDITIONAL ALGEBRA. (B.) (Page 635.)

2. $187\frac{1}{2}$; $(x+1)(x+2)$; $1\frac{7}{108}$; 16. 3. 2. 4. 2, $2\frac{1}{2}$, $3\frac{1}{2}$,
5. $2\frac{1}{2}$ days. 6. £216, £288, £384, £512. 7. £33. 3s. 0d. 9. $\frac{1}{4}$, -15.
10. 7658178, 5146893, 1·4841414.

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